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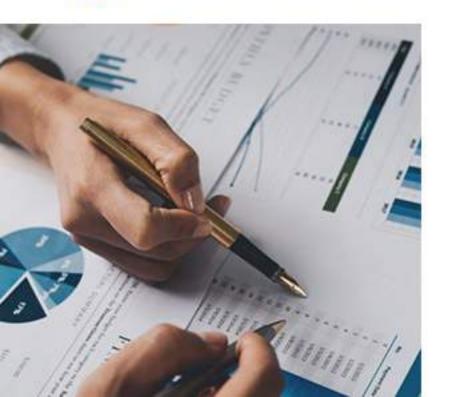
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MUSICIANS SAVING GLOBAL ECONOMIES: A HINGED DIVE INTO TAYLOR SWIFT AND BTS' IMPACT

midst global economic challenges, certain industries showcase resilience, and the entertainment sector stands out in this regard. Experts have frequently highlighted its somewhat recession-proof nature. Offering affordable reprieves, music, concerts, and movies have historically provided people with solace during tough times. In the heart of this industry, Taylor Swift and BTS concerts have merged as a significant economic contributor.

Even during recessionary periods, Swift's monumental tours and album launches stimulate vast consumer expenditure. Forbes reported that the star pocketed over \$100 million in 2020, amidst the global economic downturn. Her merchandise sales alone touched an estimated \$200 million, with her North American

Reputation stadium show contributing \$17 million to this figure. Swift's tours are also instrumental in job creation. The Eras Tour, for instance, employs over 900 individuals spanning from the concert crew to security. This tour is poised to shatter records, with analysts projecting it to bypass the \$1 billion mark. If these predictions are accurate, Swift's tour will eclipse Elton John's record of \$939 million, establishing her show as the most significant tour in musical history. When its ticket sales started in November 2022, Ticketmaster (the ticket sales site) expected a total of 1.5 million fans to log on to buy tickets, but there ended up being 14 million who tried to purchase their ticket at the same time, including several bots that crashed the website.

On the tour's opening night in Glendale, Arizona, Swift's concert revenue surpassed that of Super Bowl held in the same stadium earlier that year. To put this in perspective, Swift has essentially been hosting two to three Super Bowl-sized events every weekend for months. (For those who don't know, the Super Bowl is the biggest annual sporting event in the US. It has over 100 million live viewers. Schools and offices close early so people can watch it.). Research firms like QuestionPro have been closely monitoring this phenomenon. Their data, shared with CNN, forecasts \$2.2 billion from North American ticket sales, excluding resales where fans are already spending grandly. Similarly, another study by QuestionPro, shared with Fortune, projects the

tour to potentially amass \$4.6 billion in consumer spending in the US. This wave of economic activity doesn't only enrich Swift but also invigorates local economies. Ilinois Governor JB Pritzker, for instance, attributed the tour's Chicago stops as a pivotal factor in setting a hotel revenue record. BTS, the most popular K-Pop music groups in the world managed to generate



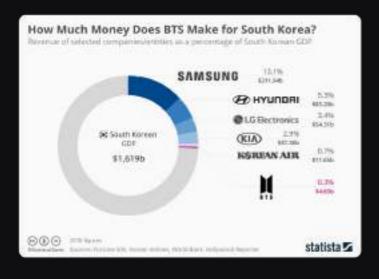
over \$1 billion in revenue in 2021, making them one of the highest – paid music groups in the world. BTS generates a significant amount of revenue from music sales alone. Their album BE made \$5.61M in pure sales and stood as 2nd most successful album worldwide in 2020. Their tours are also a major source of revenue. Their merchandise is sold through a variety of channels.

In 2021, it managed to generate over \$100 million in revenue for the group which represents a significant portion of their overall revenue. In 2022, while placing 27th on the top 40 tours by revenue, their Permission to Dance tour garnered a whopping revenue of \$75,489,240 with 458,144 attendees through mere 11 shows. This translated to BTS earning an average of \$6.86 million and drawing 41,649 people per show.

In addition to the revenue generated from ticket sales, BTS's tours and concerts also generate revenue from worldwide concert streaming, merchandise sales, food and beverage sales, and sponsorship deals. BTS's impact on the South Korean economy is not just limited to the entertainment industry. They have helped to promote South Korean tourism and other industries such as fashion, beauty, and tourism.

A study by the Korea Institute for Small and Medium Business Association found that SMEs that sell Korean cosmetics saw their sales increase by an average of 20% after BTS members were featured in a commercial for brand. Moreover, BTS has helped SMEs to reach new markets around the world such as Europe, Saudi Arabia, India and China.





The 7-membered boy band has become is a major cultural ambassador for South Korea. Music videos, behind the scene videos, variety shows and promotional contents have helped to promote Korean culture around the world. It has also helped to break down stereotypes about South Koreans as people have expressed the willingness to learn the culture and language of South Korea. Social media played a key role in circulating and expanding the popular culture in global markets. The members are also role models for many young people around the world and have contributed towards charitable causes and have used their popularity to promote important causes such as education, poverty alleviation, and mental health awareness.

busan yet to come

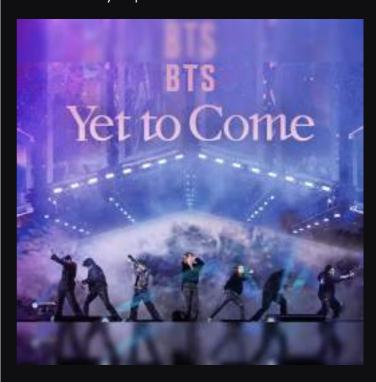
On October 15, 2022, BTS held a free concert in Busan, South Korea, to support the city's bid to host the 2030 World Expo. The concert was attended by over 50,000 people in person. To add to that, online livestreaming through Weverse, the fan platform operated by the band's management group Hybe Entertainment, claimed approximately 49 million views. Later, the show was streamed in theatered and managed to garner approximately \$5.1M in North America alone.

The Busan Yet To Come concert is a unique case study in free concert economics. The concert was funded by a combination of corporate sponsorships, online streaming advertisements, and the city of Busan. BTS also performed at the concert for free. The concert had a significant economic impact on the city of Busan. It is estimated that the concert generated over \$1 billion in revenue for the city and helped to promote Busan as a tourist destination. The concert attracted fans from all over the world, and many of them stayed in Busan for multiple days.

Event was deemed a success on both the economic and cultural fronts. While the concert showed that it is possible to hold a free concert that is both profitable and popular, it also promoted Korean culture and music and helped promote Busan as a city that is open to the world and that supports the arts.

The Busan Yet To Come concert is a significant example of how BTS is using their platform to make a positive impact on the world. They are a major economic and cultural powerhouse for the South Korean economy. BTS is estimated to contribute over \$5 billion to the South Korean economy each year. That's the amount of revenue generated by 23 mid-sized companies combined.

Another study also shows that over the next 10 years, they can contribute up to \$32.8B to their country. The influence of BTS and ARMY as a non-state actor throughout the years has thus, without a doubt, given tons of positive impacts towards many aspects of South Korea.



what else is



behind only the April 2019 weekend when Avengers: **Endgame opened**

Swiggy launched a co-branded credit card in partnership with **HDFC Bank to boost** basket sizes while providing flat discounts for cardholders



Ŧ

Finance Minister Nirmala Sitharaman announced that the 28 percent GST on online gaming, casinos and horse racing will be implemented by **October 1, 2023**

Stability Al unveils powerful image generator SDXL 1.0 It is built on an architecture based on 3.5B parameters and a 6.6B parameter refiner

stability ai



SVB collapsed in March 2023 due to risky lending practices, exposure to cryptocurrency market, and loss of confidence among depositors

> 2023 highlights



SULA VINEYARDS THE KING OF INDIAN WINE

Sula Vineyards: Uncorking the Phenomenon of Indian Winemaking

Take a stroll through the vineyards of India, and you're bound to be enchanted by the majesty of Sula Vineyards, the undisputed monarch of Indian winemaking. From its inception to its awe-inspiring ascent, this wine empire has flourished like a fine wine aged to perfection. Join us as we unravel the secrets of Sula Vineyards' triumph, exploring the numbers, the policies, and the genius marketing that set it apart.

Picture this - 3,000 acres of flourishing vineyards, producing a staggering 7 million liters of wine annually. Sula Vineyards stands tall as India's largest and most successful wine producer. Since its founding in 1997, the vineyard has been an industry trailblazer, contributing to a remarkable 70% share of the Indian wine market. It's no wonder that Sula's wines grace the tables of millions of connoisseurs and enthusiasts across the nation. The Sula story began with the visionary Rajeev Samant, who, with a humble investment of INR 30 lakhs (approx. USD 40,000), embarked on a journey to change India's wine landscape forever. Nestled in the Nashik Valley, the cradle of Indian winemaking, Sula Vineyards commenced its production with a mere 3 acres of land. The sparkling moment of success came in 2002 when Sula launched its iconic Sauvignon Blanc, setting new standards for Indian wines and gaining international acclaim.

With annual revenue exceeding INR 360 crores (approx. USD 48 million), Sula Vineyards continues to flourish and break new ground. Like any thriving industry, favorable policies played a crucial role in Sula Vineyards' ascent. The early 2000s witnessed the Indian government's progressive stance, easing restrictions on foreign investments in the wine sector. This policy shift opened the floodgates for international collaborations, injecting fresh capital and expertise into the industry. Covid 19 increased the rate of premiumization of alcoholic beverages. People preferred expensive wines at home, and drinking at home became socially acceptable, so Sula

strategized toward home delivery. Even though the Off Trade fell, the On Trade kept rising. Over 50% of all of Sula's energy needs are met by the solar panels installed at the winery in Nashik. The packaging used for Sula's products are 99% recyclable, and the company has planted over 30,000 trees around Nashik in the last few years.

With the 2001 Maharashtra Wine Policy, recognizing wine as a critical agro-processing industry and reducing excise duty was a step toward the growth of wine. Other states like Karnataka came up with similar policies. Additionally, the government's decision to classify wine as an "agricultural product", reduced excise duties, enhancing the affordability of Indian wines for consumers. The move bolstered domestic sales and spurred a renewed interest in viticulture, boosting the number of grape farmers and vineyards nationwide. The imposition of taxes on foreign wines has resulted in significantly higher prices creating a formidable obstacle to penetrating the Indian market. This made Sula the absolute.



SULA'S SPECIAL EDITION SPARKLING ROSÉ WINE



Behind every successful brand lies a stellar marketing strategy, and Sula Vineyards has mastered the art of captivating its audience. They host an impressive 1.2 million visitors annually, with over 70,000 wine enthusiasts flocking to their annual SulaFest, a celebration of music, food, and wine. Their Instagram following of over 200,000 showcases their prowess in engaging with the millennial demographic. Today, their wines are exported to over 30 countries, generating substantial foreign exchange revenue for India.

Hinny	Number of Instagram Fallowers	Number of Likes on Facebook Page	Number of Parties Fallences
LMVII Woox and Sparts	.008	291.1	171.5
Canno Zapeta	137	43.8	21.9
Champagne Tailinger	129	493	1.8
Marchani Aminori	109	313	18.4
Suls	100	122.9	1308
Sodyga Carron	#12	713	6.3
Ziscoardi Wines	86.7	- 23.9	154
Visa VI	447	3.0	
Victoria Biltor	41.1	168.7	1.9
Mangen de Rived	39.1	173	17.9
Stordown Wises	36	239	46.1
Francis Wisses	36.8	72.8	26
6Al Galle Winery	11.1	7.4	1.4
Circust Zampa	8.7	747	1.2
Chargo	1.4	788	1.3
Constellation Brends	979	37.5	

In conclusion, Sula Vineyards' meteoric rise in the Indian wine market is a tale of audacity, innovation, and astute policymaking. With record-breaking production, international acclaim, and strategic marketing brilliance, Sula has firmly etched its name in the annals of winemaking history. So, as you savor that next glass of wine, toast to Sula Vineyards, a potent brew of dreams realized and a journey that proves anything is possible with the right blend of passion and policy. Cheers to a wine legacy that keeps evolving and aging, just like the finest wines of Sula!



he gig economy is transforming India's workforce, offering professionals newfound independence and flexibility. Using digital platforms, they can now work on their own terms, collaborating with clients from across the country and beyond.

In this article, we delve into the rise of India's gig economy, its impact on traditional work structures, and the challenges and opportunities it presents. Join us as we explore how it empowers talented individuals to pave their own paths in the ever-evolving world of work.

Let's start by clarifying what the gig economy means - it's all about a job market where you see a lot of short-term and temporary gigs. These gigs are often done by freelancers and contractors instead of your regular full-time employees. The term "gig economy" is borrowed from the music industry, where performers schedule short-term engagements at different venues, known as "gigs." In this economic model, individuals, or "gig workers," are engaged on a project-by-project basis, providing specific services or tasks to their clients.

The gig economy encompasses a wide range of positions and industries, offering opportunities to both skilled professionals and unskilled workers. Freelancers in graphic design, writing, and digital marketing, as well as independent contractors in IT, legal services, and consulting, all find a place in the gig economy. In India, gig workers also include on-demand service providers like Ola and Uber drivers, food delivery riders for Zomato and Swiggy, and home service providers via Urban Company.

BOON O



Likewise, creative artists like photographers, and musicians also often secure gigs for events and performances.

The gig economy is experiencing a global surge (especially after the pandemic) due to technological advancements, changing work preferences, and cost-effectiveness for businesses. This rise is particularly evident in India, where a large and tech-savvy youthful population seeks flexible and diverse career paths. The country's increasing internet penetration and urbanization have facilitated seamless connections between gig workers and global clients.

OF THE NOMY

office employees whining to-5 grind, haven't we? he said "When you want pires to help you achieve 9-to-5 workday also has gig economy!

BREAKDOWN OF THE GIG WORKFORCE OF INDIA



R BANE?



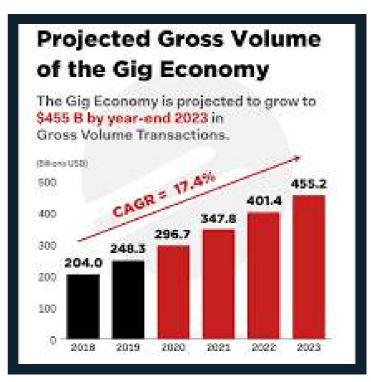
Indian start-ups have also played a part in paving the way for a unique kind of gig economy. Within a country boasting a vast but largely unskilled workforce of nearly 500 million individuals, companies like Ola, Zomato, BigBasket, and other quick-commerce firms have given rise to a new category of formal workers, contributing to the transformation of India's labor market.

The emergence of this new type of employment is disrupting the traditional 9-5 work structure and has become a driving force empowering the youth of the nation.

However, its rise has also raised concerns about what will happen to traditional employee-employer relationships and work life balance.

On the one hand, the gig economy provides workers with the ability to choose their own hours, work from anywhere, and pursue multiple projects simultaneously. This can be a boon for individuals who value flexibility and autonomy. Moreover, it can benefit businesses by providing access to a wider pool of talent for their fluctuating demands.

It also enables them to scale their operations more quickly since they can save on the cost of maintaining full time employees.



FUTURE OF THE GIG ECONOMY STATS

ly 2023, predictions are that 52% of the US workforce will have been independent workers at some point in their career.

52%

In less than a decode, it is thought that 40% of America will be freelance workers.

40%

By 2025, 20-50% of customer service agents will be freelance.

50%

80%

In the coming years, 80% of large corporations are planning to increase their flexible workforce considerably.

A WORK IN PROGRESS

The future is really about people deciding to live and work they way they want

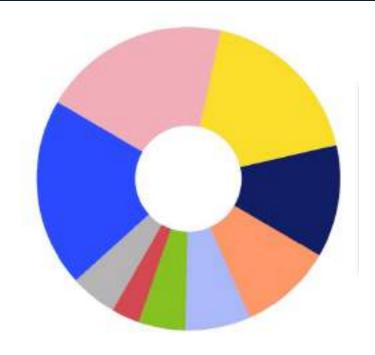
On the other hand, the gig economy has also been criticized for its tendency to destroy traditional employment relationships.

Gig workers are often classified as independent contractors, which means they do not receive the same benefits as traditional employees, such as health insurance, paid time off, and retirement contributions. Also, the fluid nature of this work culture can make it difficult for workers to build long-term careers and establish trust with employers.

The gig economy has also been linked to disruptions in work-life balance. For some workers, the flexibility of gigs can lead to overwork and sleep deprivation. The constant need to find new gigs can also be stressful and anxiety-inducing.

What is your biggest struggle with working remotely?

- 20% Ocillaboration and communication
- 20% Loneliness
- 18% On Not being able to unplug
- 12% Distractions at home
- 10% Being in a different timezone than teammates
- 7% Staying motivated
- 5% Taking vacation time
- 3% Finding reliable wifi
- 5% Other



State of Remote Report 2020

buffer.com/state-of-remote-2020

As we conclude, the gig economy has both positive and negative aspects, depending on the circumstances. It has made inroads into the market and has had a significant impact, offering options that would not have been possible with traditional methods.

While it still has room to develop and address its shortcomings, the gig economy has no doubt helped ambitious workers put their skills to good use. From flexibility to responsibility and rewards, the gig economy has proved to be a valuable tool for businesses of all sizes.

NEWS BLOCKS

wework

FROM \$47 BILLION TO
BANKRUPTCY:
SOFTBANK'S WEWORK,
ONCE A MOST
VALUABLE U.S. STARTUP
FILES FOR BANKRUPTCY

On 6th November 2023, WeWork, a prominent flexible workspace provider, took a dramatic step by filing for bankruptcy protection in the US. The company faced crippling debt and losses as demand for office space plummeted due to cost-conscious customers and changing work trends. This marked a reversal of fortune for WeWork, which was once hailed as the most valuable startup in the US, boasting an valuation of \$47 billion. It had garnered investments from renowned backers such as SoftBank, Benchmark, and JPMorgan Chase, highlighting it's meteoric rise and subsequent fall.

01.AI, a Chinese artificial intelligence startup, has achieved a major milestone by reaching a valuation of over \$1 billion. This was made possible after a funding round that included major investment from Alibaba's cloud computing division. Founded by renowned AI expert Kai-Fu Lee, 0.1AI has quickly established itself as a leading force in AI, attaining unicorn status in less than 8 months since starting. This exceptionally fast rise is attributed to their groundbreaking open-source AI model called Yi-34B, which outperforms some of the best AI models. 0.1AI's prominence in the AI field is particularly notable given their commitment to open-source technology, setting them apart as an important player.





Sam Bankman-Fried, the founder of FTX, is slated for sentencing on March 28, 2024, by U.S. District Judge Lewis Kaplan, with the potential for a lengthy prison term due to allegations of financial misconduct. Amidst the legal turmoil, FTX's former customers have a glimmer of hope; a tentative settlement in the bankruptcy proceedings suggests they may recover at least 90% of available funds. The downfall of FTX has highlighted the need for more robust regulatory measures within the cryptocurrency industry, as investors and regulators alike deal with the implications of the exchange's dramatic collapse.

Reliance Industries is reportedly in talks to acquire Walt Disney India operations. This move comes after Reliance recently acquired the broadcasting rights for the Indian Premier League (IPL), a hugely popular cricket tournament in India. While the deal is yet to be finalized, Reliance is valuing the assets at \$8 billion, while Disney is said to be valuing them at \$10 billion. The final terms and conditions of the deal are still being negotiated, but Disney is expected to retain a minority stake in the company through a cash and stock deal. If this acquisition goes through, it will be a significant win for Reliance and the Ambani family, who have been expanding their presence in the entertainment industry recently. It will also give them a strong foothold against their competition, including the contemporary Sony India and Zee merger.



analysing its effects on indian economy

ussia-Ukraine conflict, initiated by Russia's annexation of Crimea in 2014, persists in the Donbas region. Despite ceasefires and diplomatic efforts, tensions escalate. The ongoing conflict has broad consequences, politically, socially, and economically. This case study delves into the economic and financial impacts on the Indian economy, examining whether India benefits as a war profiteer.

We looked at the major industries of both Ukraine and Russia and decided to focus on 5 major areas:

- Metals and Minerals
- Oil & Gas
- Coal Sector
- Food and Agro
- Fertilizers and Chemicals

We selected these five industries based on their significant contributions to the economies of Russia and Ukraine, as well as their potential relevance to the Indian market.

METALS AND MINERALS

As global population and urbanization continue to rise, the demand for metals and minerals is increasing, driving up prices worldwide. The conflict in Russia and Ukraine, major producers of metals, has significantly impacted the market. Key points include:

Russia's Export Highlights:

- Russia is the fourth-largest tungsten exporter (12.3% of global supply) and a major platinum supplier.
- It ranks second in cobalt exports, crucial for rechargeable batteries.
- Russia is the tenth-largest lead and sixth-largest gold exporter, contributing 4.4% to global production.

Ukraine's Export Highlights:

• Ukraine is a major iron ore exporter, with exports valued over \$2 billion in 2020.

It is a significant steel exporter, with exports exceeding \$4 billion in 2020.



Can Indian exporters help fill the gap in the global commodities market?

Data from UN Comtrade shows 2,700 Indian exporters dealing in 11 key products previously exported by Russia and Ukraine, including crude petroleum, corn, wheat, sunflower oil, iron ore, iron and steel, platinum, gold, copper, turbo-jets, turbo-propellers, insulated wire, and electric conductors. Besides gold, India is a significant exporter of silver (over \$1.5 billion in 2020) and also exports platinum and palladium (valued at over \$800 million and \$1 billion respectively in 2020). In light of the geopolitical situation, Indian exporters have the potential to contribute to filling the gap in the global commodities market.

OIL AND GAS

Oil and gas, often termed as "liquid gold," are crucial global resources utilized across various industries including transportation, manufacturing, and energy production. Europe grapples with an oil crunch as Russia halts exports to most EU nations, leading to a significant energy crisis in the European Union.

India's current situation:

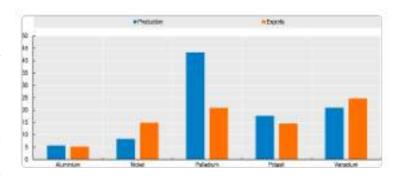
India's strong dependence on crude oil has traditionally burdened consumers due to insufficient emphasis on renewable energy. High prices of electric vehicles, exceeding a million rupees, have led consumers, especially those with lower incomes, to opt for fuel-inefficient automobiles, worsening their reliance on fossil fuels.

India's imports by industry in 2018–2019:

Disruptions in Russia's oil and gas supply can profoundly affect India's energy security, causing increased fuel and electricity prices and potential supply shortages. India heavily relies on LNG imports, constituting about 50% of its total natural gas consumption. The power sector, accounting for 25% of total electricity generation capacity, heavily depends on natural gas, and elevated LNG prices contribute to higher electricity generation costs, resulting in increased prices for consumers.

Oil and gas usage in Ukraine:

Elevated crude oil prices have raised transportation costs, affecting the prices of goods and services in India. Industries reliant on crude oil, like petrochemicals, plastics, and fertilizers, face increased input costs, impacting competitiveness and profitability. To offset higher LNG prices, India is diversifying its LNG sources, exploring alternatives such as the US and Australia to reduce dependence on Russian imports.



COAL SECTOR

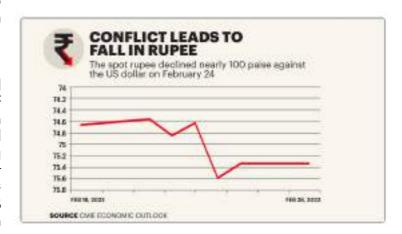
India relies significantly on coal imports, constituting around 70% of total electricity generation. In the fiscal year 2020–21, approximately 6% of the 169 million tonnes of imported coal came from Russia. Elevated coal prices have raised electricity generation costs, affecting the prices of goods and services and resulting in higher electricity tariffs for consumers in India.

Power Generation by Industry, 2019:

To counter the effects of increased coal prices, India is working to decrease import reliance and diversify coal sources. The government is actively advocating cleaner coal technologies like supercritical and ultrasupercritical coal-fired power plants, offering higher efficiency and reduced greenhouse gas emissions compared to traditional counterparts.

Analyzing the political situation:

As the world's second-largest coal exporter with ample reserves, Russia provides India with a stable coal supply. Importing from Russia allows India to decrease reliance on traditional crude suppliers like Saudi Arabia and Iraq, as well as coal suppliers like Indonesia and Australia. However, this dependence on Russia exposes India to geopolitical risks, with potential disruptions in crude oil supplies impacting its energy security.



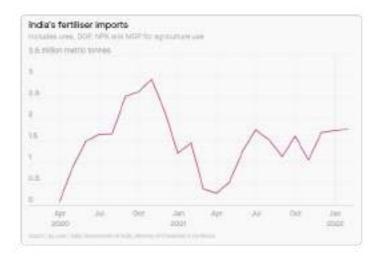
FOOD AND AGRO

Food and agro-products are vital for human sustenance and contribute significantly to the global economy. Agriculture, a cornerstone industry, supports various sectors by providing food and raw materials. In the Indian economy, agriculture holds a pivotal role. Rising oil prices affecting freight movement are anticipated to elevate the prices of food items like vegetables, fruits, legumes, and oil. This price increase benefits the entire cycle from farmers to merchants, generating revenues for Indian traders and fostering hope in the agro-industry and Indian agriculture.

A thriving agro-industry is expected to drive demand for chemicals and fertilizers, thereby promoting growth in these sectors. The World Food Programme, a UN organization providing food relief, faces a challenge as Ukraine, a major contributor, halts its contributions due to the ongoing war. Both Ukraine and Russia, significant players in global food markets, are net exporters of crucial cereal crops like wheat, maize, and barley. Additionally, they are major exporters of sunflower oil, a widely used vegetable oil.

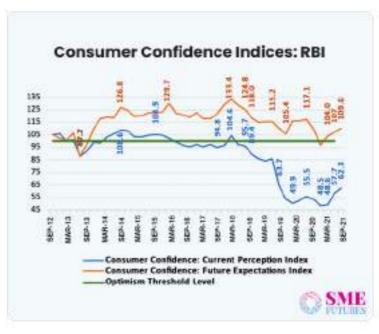
Grain Exports by Ukraine during the Conflict:

The potential effects of decreased food production from Russia and Ukraine won't be felt everywhere. The nations that import products directly from these nations are among the most susceptible.



FERTILIZERS AND CHEMICALS

Fertilizers are crucial for agriculture and global food security, with applications in pharmaceuticals, textiles, and plastics. The Indian government has orchestrated agreements between domestic fertilizer producers and international suppliers, ensuring stable supplies to farmers. India's chemical industry is diverse, offering over 80,000 products, including bulk, specialty, agrochemicals, petrochemicals, polymers, and fertilizers.



Chemicals Sales in 2020 by Country:

Russia is a key trading partner for the EU, with countries aligning with them. India, opting for a neutral stance, stands in a favorable position in this situation.

Fertilizer Producers by Country:

The Russia-Ukraine crisis raises concerns about fertilizer global shortages, leading anticipated price hikes and fears of rising food costs. Russia, the world's second-largest potash producer, faces disruptions in trade flows due to regional unrest and sanctions. Farmers are scaling back fertilizer use, potentially impacting global agricultural production and increasing food costs which are currently at a ten-year high according to a United Nations indicator. Rising fertilizer expenses, exacerbated by high natural gas prices, lead to production suspensions in some European facilities. Russia's restriction on ammonium nitrate shipments beyond its Eurasian Economic Union bloc adds to the challenges. The ongoing energy crisis is a result of the conflict, with Russia being a major exporter of natural gas and a significant source of crude oil and coal.

CONCLUSION

The Russia-Ukraine conflict may significantly impact India's economy, causing inflation and a growth slowdown due to rising oil prices and global supply chain disruptions. International sanctions could affect India's trade relations with Russia and other nations. To address these challenges, India should diversify oil and gas imports, explore new trade partners, and invest in domestic industries to reduce import dependency.

PREDICTING

LOAN DEFAULTS USING MACHINE LEARNING

A COMPREHENSIVE ANALYSIS FOR BANKS

Banks are increasingly adopting machine learning models to predict loan defaults, aiming to reduce financial risks and make better lending decisions. This project focuses on developing a reliable machine learning model that uses a detailed dataset to identify potential loan defaults. By making accurate predictions, banks can strike a balance between managing risk and ensuring profitability, granting loans to dependable borrowers.





THE DATASET

We used a big set of data from Kaggle to help us understand and predict when borrowers might not pay back their loans. This data set was quite detailed, with 111 different types of information (which we call features) about each loan, covering a total of 42,542 loans.

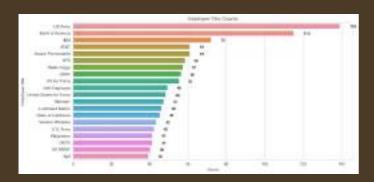
DATA PREPROCESSING

In our project, we cleaned up the data by getting rid of columns that had more than 50% missing values. We also removed features that weren't useful for our analysis, like 'url' and 'description'. Plus, we eliminated any columns that were too similar to each other (which is known as high collinearity) and those that contained information about future events that wouldn't be known at the time of loan application.

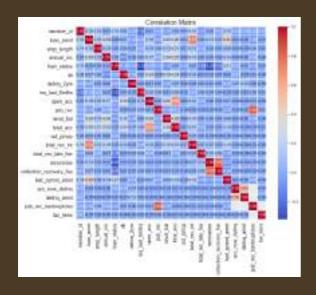


KEY INSIGHTS

Word Cloud: Examined the reasons for loans to help banks with their decisions. A word cloud visually displayed these reasons, with bigger words representing more common purposes, providing clear insights into borrowing trends. We can see credit card (repayment), debt, monthly bills as some of the main reasons to take up loans.



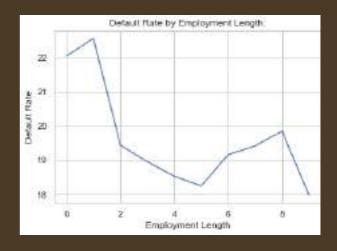
Line Chart: We found that credit score and employment length are key indicators of whether someone might default on a loan. To illustrate this, we used a line chart that clearly shows the relationship between these factors and default rates over time. We see that as the employment length increases the default rate decreases.



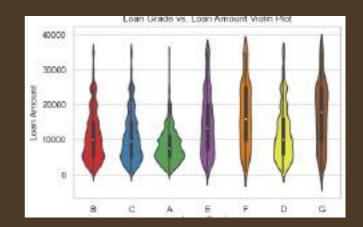
Grade vs. Loan Amount Violin Plot: Created a violin plot of loan grades split by loan amount. This could help us understand the relationship between loan grade and loan amount, and if there are any significant differences in this relationship between different loan grades.



Column Chart: Assessed loan repayment trends by job title using column charts, where the height of each bar indicates the default frequency for that profession. This visual comparison enhances risk evaluation and informs more accurate lending decisions. We can see the US Army is one employee title which has taken the most number of loans.



Correlation Matrix: Data visualization tools like heatmaps and histograms reveal correlations and distributions. Values closer to 1 means it has high positive correlation, a value closer to 0 means there is no correlation and a value closer to -1 means there is negative correlation between those columns.

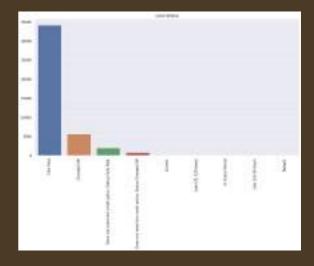


Histogram of Loan Amount: Shows the distribution of loan amounts in the dataset. It gives us an idea about the range of loan amounts that are common in the dataset and how frequently they occur. It also helps us identify any outliers or unusual loan amounts in the dataset.

TARGET COLUMN REFINEMENT

'Loan_status' column refined to focus on 'Fully Paid' and 'Default' for ML modeling.

'Charged off' accounts considered as defaults to address data imbalance. Still the data imbalance was seen, thus we used the SMOTE (Synthetic Minority Oversampling Technique to address data imbalance of Minority samples.



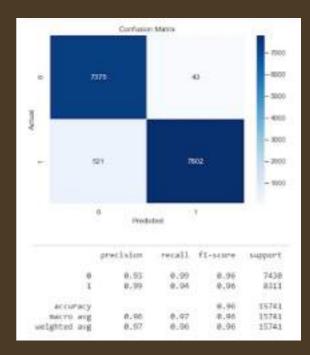
MODEL BUILDING

- 1. Splitting of data into a 70% training set and a 30% testing set
- 2. Evaluation of ML models: Logistic Regression, Random Forest, and Decision Tree Classifiers
- 3. Random Forest emerged as the most accurate with a 96.41% prediction accuracy.

2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 20

CONCLUSION

Using Random Forest, we were able to predict 96.41% person time whether a person will default on the loan or not. The project highlights machine learning's role in improving loan approval and risk management for financial institutions. Emphasizes the need for banks to adopt advanced analytics for loan default prediction to maintain profitability and minimize defaults.



The E-Commerce Dilemma - Expanding and Innovating in a Competitive Market

Scenario: XYZ Electronics, a well-established e-commerce company specializing in consumer electronics, is facing a multifaceted challenge. Over the past year, they have experienced a significant decline in sales and customer satisfaction. This situation is exacerbated by the competitive landscape, including both traditional retailers with online presence and agile tech startups. XYZ Electronics needs to strategize to revitalize their business.

Specifications:

- XYZ Electronics operates in multiple international markets.
- Their product range includes consumer electronics, appliances, and smart devices.
- They have a loyal customer base but have noticed a decline in new customer acquisition.
- The company has a supply chain spanning multiple continents.
- XYZ Electronics has a strong online presence but is also considering potential brick-and-mortar expansion.
- They are committed to sustainability and are exploring eco-friendly initiatives.

CRACK THE CASE



big bren time

BRAIN TEASERS

COIN CHAMP

There are two teams in a game. Rohan and Sanya are playing a game against Abhi. Abhi's team name is Bit_Rebel. Rohan and Sanya are playing under the team name of Trojan_Code. The game starts with team Trojan_Code giving ₹1 to team Bit_Rebel. The game is - Rohan and Sanya will be seated in two different rooms.Both Sanya and Rohan will toss a coin each. Each of them has to guess the outcome of the other one's toss. If both guesses are right, team Trojan_Code wins ₹3. Else they get nothing. What is the probability of team Trojan_Code winning?

A) 1/4

B) 1

C) 1/3

D) 1/2

MARKET SHARE MATH

In a specified sector, Corporation A possesses a slice of the market equivalent to 12%, Corporation B has a portion of 22%, and Corporation C commands a share of 28%. The remaining 38% is dispersed among a dozen less prominent enterprises. If Corporation A decides to fortify its market presence by raising its portion by 60% (obtained from reallocating shares from the less prominent firms), the question is, to what extent, in terms of percentage, will Corporation A's influence on the market alter?

RUSSIAN ROULETTE

If a gun's barrel with an 8-round capacity is loaded with two bullets sequentially, and a shot is discharged without any bullet being expelled, does the act of rotating (shuffling) the barrel prior to the next shot serve to increase the likelihood of firing a bullet?

GUESS THE EMOJI

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11. 44.

12. 💲 🕏

ANSWERS

1. Business
2. Investment
5. Partnership
4. Entrepreneur
5. Capital
6. Manager
7. Accounting
8. Cash flow
9. B.C
9. B.C
10. Liquidity
11. Balance sheet
11. Balance sheet



DOWN

- 2. Grouping data points based on similarity or proximity.
- 3. The sequence of processes involved in the production and distribution of goods.
- 4. The process of reaching an agreement through discussion and compromise
- 5. The total income generated from the sales of goods or services before deducting any expenses.
- **6.** The practice of providing expert advice or professional services.
- 8. Funds Investment vehicles that pool money from multiple investors to invest in a diversified portfolio
- **10.** Representing data or information graphical form to aid understanding.
- 11. A statistical technique to model the relationship between variables.
- 15. A collection of investments, assets, or projects owned by an individual or an organization.

ACROSS

- 1. The buying and selling of goods and services over the internet.
- **7.** Combining two companies into one entity
- 9. A statistical measure indicating the degree of relationship between two variables.
- **12.** An individual or group with an interest in the success of a business or project.
- **13.** The process of promoting and selling products or services, including activities such as advertising, market research, and branding
- **14.** Purchasing one company by another, often for strategic growth.
- 16. A portion of a company's profits distributed to its shareholders.
- 17. Predicting future trends or events based on past data and analysis.

DYNAMIC PRICING IN RIDE-SHARING

A COMPARATIVE ANALYSIS OF UBER AND LYFT IN BOSTON

Uber and Lyft are at the forefront of the ride-sharing industry, offering convenient transportation options for city dwellers. They have revolutionized the way people commute by providing a platform to book rides via a smartphone app. Both companies have a range of service levels, from budget-friendly shared rides to luxury private cars..

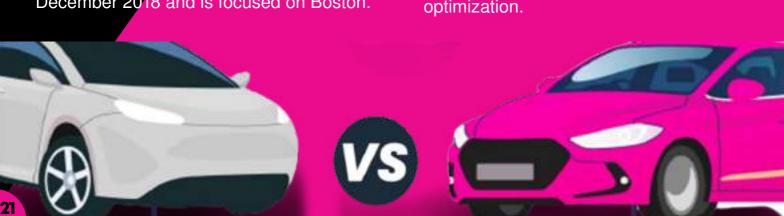
They also employ dynamic pricing, which means the cost of a ride can vary based on demand, traffic, and other factors We analyzed a dataset with 693,071 data points to compare Uber and Lyft on pricing, source/destination, time, and weather. Developed a predictive model for estimating fares based on multiple factors, helping consumers make informed decisions.

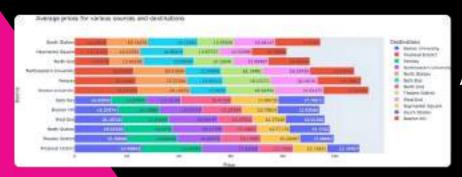
The dataset encompasses a three-week period from late November to mid-December 2018 and is focused on Boston. Some of the features are:

- Timestamps: The date and time when the ride was booked.
- Location Coordinates: GPS data indicating the pickup and drop-off points.
- Weather Conditions: Information on the weather at the time of the ride, which can influence pricing and availability.
 - Ride Specifics: Details about the ride itself, such as the type of service booked (e.g., standard, luxury).

Predictive Modeling and
Results:
Various regression models
were used, including
SGDRegressor, Lasso
Regression, Elastic Net,
Linear Regression,
Decision Tree, Random
Forest, and Gradient
Boosting. The models
achieved R2 scores
between 0.92 to 0.965,

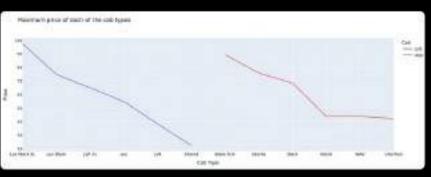
indicating high predictive accuracy. Feature selection and hyperparameter tuning were crucial for model optimization.





Average prices for various sources and destinations

Graphs showing the relation of cab types and its corresponding prices.





Price variations by time of day and weather conditions for each of the cab types Uber and Lyft.

Key Insights from Exploratory Data Analysis (EDA):

- Uber's Market Share: Uber has a larger fleet compared to Lyft, which suggests a higher market penetration.
- Pricing Comparison: Despite having more cabs, Uber generally charges less than Lyft for similar services.
- Premium Services: High-end services like Uber's Black SUV and Lyft's Lux Black XL command the highest prices.
- Geographical Pricing: Costs vary depending on the pickup and drop-off locations, with the Financial District being a particularly expensive area due to high demand.
- Weather Impact: Adverse weather conditions, such as mist and fog, can reduce the number of available cabs and lead to increased prices.

 Temporal Pricing Trends: Prices were found to be marginally higher in November, which could be due to various factors such as weather or preholiday demand.

Conclusion

The comparative analysis provided insights into the pricing strategies of Uber and Lyft, highlighting the factors that influence fare costs. The predictive models developed from the dataset proved to be highly accurate, suggesting that such models could be used as reliable tools for fare estimation, which can greatly assist users in planning and budgeting their rides

E-commerce offers substantial opportunities for businesses in emerging countries, but challenges such as the need for customer trust, limited technology, services, and finance must be addressed. To unlock the potential of e-commerce in these areas, firms should focus on infrastructure development, establish consumer trust, implement

Overview of the Emerging Market

markets have significantly Emerging benefited from the eCommerce surge, providing companies with opportunities reach customers at home. commerce has played a crucial role in granting access to the global marketplace, fostering financial independence, and reducing poverty and inequality in many countries. The ITU reports a 24% growth in the eCommerce market in developing countries over the past five years, attributed to online payment systems, digital infrastructure, and mobile device usage. It predicts that the eCommerce market in these nations will surpass \$3 trillion by 2025.

E-commerce has significantly increased employment opportunities in developing countries, employing around 10 million people in 2018 with an expected increase to 24 million by 2025. Digital services such as tech support, SEO, and digital marketing have grown over 30% in the past five years.

effective marketing strategies, and ensure accessible products and services. These strategies can drive revenue growth, expand subscriber bases, and foster customer loyalty. We will explore these strategies in detail in this article to help businesses take advantage of the opportunities presented by e-commerce in developing regions.

BETTER MARKET EXPANSION AND REACH

Businesses can efficiently expand their reach using the global digital infrastructure, building brands in distant locations with minimal resources. This expanded market access provides a competitive advantage, identifies untapped opportunities, and boosts revenue by capturing new customer approaches, With strategic bases. companies can gain a competitive edge increasing market share expanding into emerging markets.

REDUCED OPERATIONAL COSTS

significantly E-commerce reduces operational costs by outsourcing research content distribution, and enabling companies to stay agile and optimal financial results investors. Users benefit from essential goods and services without high costs or logistical challenges, fostering efficiency and growth opportunities.

The growth of e-commerce has significantly impacted the economic development of emerging nations, contributing to a substantial increase in government income. The World Bank notes that e-commerce in developing countries contributed 3.2% to GDP in 2018, up from 1.4% in 2014, highlighting its positive influence on GDP in various countries.

Advantages of E-commerce in Emerging Markets

E-commerce in emerging markets has tremendous potential, with benefits such as efficiencies, access to global markets and reduced costs. A powerful marketing tool, breaking down geographical barriers and helping businesses scale quickly. In this section, we'll delve into these benefits and look at why companies are turning to eCommerce for explosive growth.



The Importance of Infrastructure and Technology for E-Commerce Growth in Emerging Markets Infrastructure is critical for businesses entering emerging markets,

Infrastructure is critical for businesses entering emerging markets, and a lack thereof can impede e-commerce growth. For instance, inadequate transportation systems delaying deliveries may harm a brand's reputation. Technology is equally crucial for success in emerging markets, addressing challenges like limited access to inancial services and low digital literacy levels. Developing tailored

INCREASED AVAILABILITY

E-commerce in emerging markets holds the potential for substantial economic returns by enhancing access to goods and services, particularly benefiting consumers in rural areas with limited eliminates geographical options. boundaries, offering a broader range of possibilities than traditional avenues. Positive economic growth in ecommerce within these markets is poised drive expansion to and development.

CHALLENGES IN EMERGING MARKETS

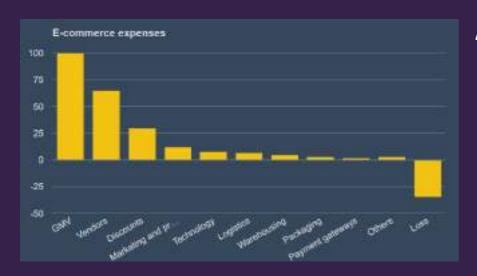
The rapid growth of e-commerce in emerging markets presents opportunities but also challenges. Businesses that are looking forward to prospering in emerging countries need to invest in infrastructure, technology and marketing to survive in the long run.

solutions necessitates leveraging technology. Entrepreneurs must comprehend local market dynamics and consumer behaviour to create effective marketing strategies aligned with their target audiences. Compliance with changing regulatory standards and regulations between countries is a concern for e-commerce enterprises. Apart from these, navigating security and privacy hazards, such as cyber threats and local regulations, is critical.



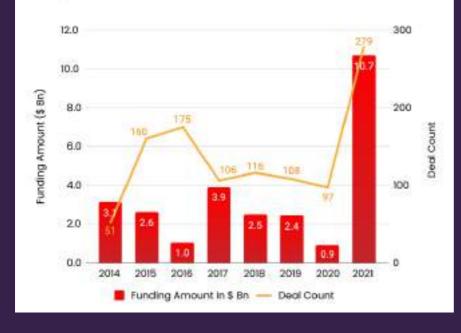






Ecommerce Funding In India Jumped More Than 1000% In 2021 Compared To 2020

Startups in the Indian ecommerce space raised more than \$27 Bn during 2014–2021



Strategies to Thrive in the Realm of E-Commerce

Modern technologies and digital solutions in emerging markets present vast opportunities for e-commerce and economic growth. To fully unlock this potential, three strategies are crucial: investing in infrastructure like reliable payment systems and logistics, reducing barriers to entry through streamlined regulations and lower transaction costs, and raising awareness via marketing initiatives, educational programs, and collaborations with local businesses. By implementing these strategies, e-commerce can emerge as a potent driver for economic growth in emerging markets, creating more opportunities for residents.

Conclusion

E-commerce has revolutionized how entrepreneurs sell products, providing substantial reach and advantages. Customer reviews and feedback drive competition in the evolving e-commerce landscape. This shift enables widespread access to affordable goods and services, significantly improving lives. E-commerce stands as a valuable asset for businesses in these areas, with the trend poised to continue, promising even brighter futures for entrepreneurs and clients.



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