

The impact of Blockchain on the gig economy and Freelancing

D17B - 22



What is freelancing ?

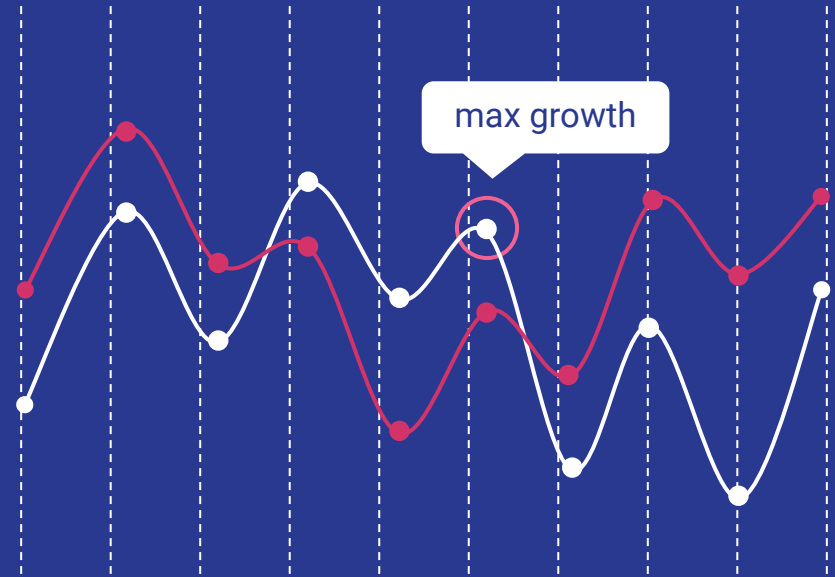
- Individuals work on a project or service basis.
- Freelancers are not permanent employees but work for clients or businesses.
- Offers flexibility in project choice and work arrangements.

What is gig economy?

- A broader labor market concept.
 - Includes freelancers, independent contractors, and part-time workers.
 - Involves short-term, flexible "gigs" or jobs.
 - Often facilitated by digital platforms or apps.
 - Offers flexibility but may lack job security and traditional benefits.
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Demographics

- Over 50% of Indian respondents anticipated more than 50% growth in their freelance businesses. This reflects a recognition of the increasing global demand for freelancers.
- 70% of Indian freelancers reported working exclusively as freelancers, with 48% of them dedicating 30 hours or less per week to their freelance work.
- A NITI Aayog report estimated significant growth in India's gig workforce, projecting it to reach 2.35 crore by 2029-30, up from 77 lakh in 2020-21.



Challenges in the Traditional Financial System

Delayed Payments

Freelancers often struggle with delayed or unpaid payments, resulting in a loss of income.

Payment Recovery

Legal action to recover payments can be costly and impractical.

Negotiation

Clients may face risks, as freelancers may demand additional fees beyond the agreed terms.

Challenges in the Traditional Financial System

Platform Commission

High transaction fees (up to 20%) on freelance platforms are a significant drawback (for eg. Fiverr).

Restrictions

Cross-border payments are hindered in countries without support for popular payment mechanisms like PayPal and Stripe.

Finding Clients

Building a strong client base demands relentless marketing efforts, and an impressive portfolio. maintaining excellent communication is crucial for securing repeat business.

How Blockchain will help ?

1. Streamlined Cross-Border Payments:

Bitcoin's decentralized nature enables borderless and seamless transactions.
Eliminates intermediaries and hefty fees in cross-border payments.

2. Financial Inclusion:

Provides financial access to underserved regions in the gig economy.
Equalizes opportunities and income for freelancers from diverse backgrounds.

3. Secure Transactions:

Blockchain ensures transparency, security, and irreversible payments.
Smart contracts establish clear project terms for payment protection.

How Blockchain will help ?

4. Empowerment for Freelancers:

Low transaction fees empower freelancers as entrepreneurs.
Bitcoin earnings can be strategically allocated, fostering independence.

5. Future of Work:

Bitcoin catalyzes a more equitable and thriving gig economy.
Empowers freelancers to navigate the digital marketplace with confidence.

6. Proof of Work and Intellectual Property Protection:

Blockchain records all work, freelancer profiles, client reviews, and intellectual assets.
Immutable records provide tamper-proof ownership rights.
Encourages a cooperative relationship between clients and freelancers.

Conclusion

- Large enterprises are also getting onboard blockchain's intersection with the gig economy, and the next several years will see rapid adoption as market-shifts in employment continue.
- Adoption rates of blockchain technologies within the gig economy will only increase as developers address blockchain's scalability issues, price volatility and susceptibility to hacking attacks.
- For enterprises who have come to rely on alternative work arrangements, it is vital that technologies like blockchain continue to be applied to the gig economy to help solve some of the problems that are holding it back from reaching its true potential.

References

- [The Impact of Blockchain on the Gig Economy: Revolutionizing Freelancing](#)
- [Gig Economy: Challenges and Opportunities in India](#)
- [How Blockchain Is Poised to Disrupt the Gig Economy | Entrepreneur](#)
- [CRYPTOCURRENCY AND THE GIG ECONOMY-THE RISE OF THE FREELANCE ECONOMY by platin coin - Issuu](#)

Implementation Screenshots Exp 6

The screenshot displays a web application interface for deploying and running transactions. The interface is divided into three main sections: a left sidebar for contract management, a top center area for the Solidity contract code, and a bottom right area for transaction details.

Left Sidebar: Deployed Contracts

- Contract:** FREELANCECONTRACT AT 0XC5F...2EC
- Balance:** 0 ETH
- Buttons:** addClientReview, addFreelancerP..., addIntellectual..., completeProject, fundContract, releasePayment, startProject, client, clientReviews
- Inputs:** 4, Web Developer, 78956, 5, Good work

Top Center: Solidity Contract Code

```
1 // SPDX-License-Identifier: GPL-3.0
2 pragma solidity >=0.8.2 <0.9.0;
3
4 contract FreelanceContract {
5     address public client;
6     address public freelancer;
7     uint public totalPayment;
8     uint public projectCompletionDate;
9     bool public projectCompleted;
10    string public projectDescription;
```

Bottom Right: Transaction Details

Transaction: [vm] from: 0x5B3...eddC4 to: FreelanceContract.(constructor) value: 0 wei data: 0x608...00000 logs: 0 hash: 0x63c...a0ce0

Status: true Transaction mined and execution succeed

Transaction hash: 0x63c436e7ae99923e6d7ddcce134516c8b3b8f99b604697757fc66da1b39a0ce0

Block hash: 0x0ab92ac07ca53d3722609a320c7759f0d7a12bb59bbde289b74864d6bf3c869b

Block number: 1

Contract address: 0xC5fAbAf82aD037F0Db0a3AB229b242009012E0FD

From: 0x5B38Da6a701c568545dCfcB03FcB875f56beddC4

To: FreelanceContract.(constructor)

Gas: 2070250 gas

Implementation Screenshots Exp 7

The collage consists of five screenshots illustrating the implementation of a freelance contract on the Sepolia testnet:

- Top Left:** A Sepolia faucet interface. It displays the address `0x98D4cd913fcC0c16868bbd1E25FBfae63110A052` and a confirmation message: "Alchemy account connected, receive 0.5 Sepolia ETH! Get notified using [Alchemy Notify!](#)". A CAPTCHA is also shown.
- Top Middle:** A MetaMask wallet interface showing a balance of **0.51 SepoliaETH**. The "Activity" tab is selected, showing a transaction on Oct 2, 2023, where 0.5 SepoliaETH was received and confirmed.
- Top Right:** A Solidity code editor showing the `FreelanceContract` code. The code includes a `WorkRecord` struct and a `FreelancerProfile` struct. The deployment status is "CONTRACT DEPLOYMENT".
- Bottom Left:** A transaction receipt from Sepolia Testnet. It shows a successful transaction with hash `0x42120646e2c03dbea0b73fd89230f943c855afac216f55a44731c2c981662743`, block `4417178`, and a value of `0 ETH ($0.00)`.
- Bottom Right:** A deployment interface showing the `FreelanceContract` deployed at `0x58380a701c568545dcf803fcb875f56beddC4`. The interface includes fields for client and freelancer details, and a "Deploy" button.

Implementation Screenshots exp 8

```
lab308-25@lab30825-ThinkCentre-neo-50s-Gen-3: ~/Downloads
lab308-25@lab30825-ThinkCentre-neo-50s-Gen-3:~/Downloads$ sudo chmod a+x ganache
-2.7.1-linux-x86_64.AppImage
[sudo] password for lab308-25:
lab308-25@lab30825-ThinkCentre-neo-50s-Gen-3:~/Downloads$ sudo apt-get install f
use libfuse2
Reading package lists... Done
Building dependency tree
Reading state information... Done
fuse is already the newest version (2.9.9-3).
fuse set to manually installed.
libfuse2 is already the newest version (2.9.9-3).
libfuse2 set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 157 not upgraded.
lab308-25@lab30825-ThinkCentre-neo-50s-Gen-3:~/Downloads$ ./ganache-2.7.1-linux-
x86_64.AppImage
13:17:26.611 > Checking for update
13:17:29.791 > Update for version 2.7.1 is not available (latest version: 2.7.1,
downgrade is disallowed).
```

ACCOUNT INFORMATION

ACCOUNT ADDRESS
0x543EE421d5fD5B93D69EC1b20caA2531C7D0477

PRIVATE KEY
0x1858a6451fdcF23f03a5e0fe95a88ea4d3cdc0814bc0bd6f36035e4b22d44e
0c

Do not use this private key on a public blockchain; use it for development purposes only!

DONE

1 of 2

https://remix.ethereum.org


Connect with MetaMask

Select the account(s) to use on this site


Select all

New account

☐

 Account 1 (0xd04...94f3)
0 ETH

☒

 Account 2 (0x543...0477)
100 ETH

Only connect with sites you trust. [Learn more](#)

Cancel

Next

Account 2

New contract

https://remix.ethereum.org

CONTRACT DEPLOYMENT

DETAILS

DATA

Site suggested

Gas (estimated)

0.00273402

0.00273402 ETH

Very likely in < 15 seconds

Max fee: 0.00273402 ETH

Total

0.00273402

0.00273402 ETH

Amount + gas fee

Max amount: 0.00273402 ETH

Reject

Confirm

Implementation Screenshots



[block:1 txIndex:0] from: 0x543...D0477 to: UserAccount.(constructor) value: 0 wei
data: 0x608...20033 logs: 0 hash: 0x5b3...7de14

status	true Transaction mined and execution succeed
transaction hash	0x5f9b1c1705ea991d0a522df6412b7a87d518ee7c57f489fdb85427a35a8875ab
block hash	0x5b384aa21a08584adf37d0760a3ba80f2c0f9526c55925c14e25748447b7de14
block number	1
contract address	0xe1fdf98df02699644C925D080d175269111DA5c57
from	0x543EE4421d5fD5B93D69EC1b20caA2531C7D0477
to	UserAccount.(constructor)
gas	607561 gas
transaction cost	607561 gas
input	0x608...20033
decoded input	{ }
decoded output	-
logs	[]



[block:2 txIndex:0] from: 0x543...D0477 to: UserAccount.registerUser(string) 0xe1f...A5c57
value: 0 wei data: 0x704...00000 logs: 1 hash: 0xf86...c0e8c

status	true Transaction mined and execution succeed
transaction hash	0x7fd29ba179586cce3c5574658642128680994732934d0f4d46a181a2df807dce
block hash	0xf86bcc4c6683e17aee0c228346844228ffa59c111a9f8f4ea9c71decabbcc0e8c
block number	2
from	0x543EE4421d5fD5B93D69EC1b20caA2531C7D0477
to	UserAccount.registerUser(string) 0xe1fdf98df02699644C925D080d175269111DA5c57
gas	70663 gas
transaction cost	70663 gas
input	0x704...00000
decoded input	{ "string_username": "pushkaraj" }
decoded output	-
logs	[

CURRENT BLOCK 2	SAS PRICE 20000000000	SAS UNIT 6721975	HASH/GEN MERGE	ACT/GEN ID 5777	RPC URLS HTTP-3127.0.0.1:7545	MINING STATUS AUTOMINING	ROBOPAGE QUICKSTART	SAVE	SWITCH	⚙
BLOCK 2	MINED ON 2023-10-05 13:25:146					SAS USED 78063	1 TRANSACTION			
BLOCK 1	MINED ON 2023-10-05 13:25:04					SAS USED 607561	1 TRANSACTION			
BLOCK 0	MINED ON 2023-10-05 13:18:226					SAS USED 0	NO TRANSACTIONS			

CURRENT BLOCK

2

GAS PRICE

20000000000

GAS LIMIT

6721975

TRANSACTIONS

MERGE

WITHDRAW ID

5777

RPC SERVER

HTTP://127.0.0.1:7545

MINING STATUS

AUTOMINING

WINDRAGE

QUICKSTART

SAVE

SWITCH



BACK

BLOCK 0

GAS USED	GAS LIMIT	MINED ON	BLOCK HASH
0	6721975	2023-10-05 13:18:26	0xecd12ee90d3225767aa08d7de8d2fe327e136f7614e38d74ea7c5771e5bafb66

CURRENT BLOCK 2

GAS PRICE
29900000000

GAS LIMIT
6721975

HASHCODE
MERGE

METADATA ID
5777

RPC SERVER
HTTP://127.0.0.1:7545

Mining Status
AUTOMINING

WORKSPACE
QUICKSTART

SAVE

SWITCH

⚙️

← BACK

BLOCK 1

GAS USED 607561	GAS LIMIT 6721975	MINED ON 2023-10-05 13:25:04	BLOCK HASH 0x5b384aa21a08584adf37d0760a3ba80f2c0f9526c55925c14e25748447b7de14
--------------------	----------------------	---------------------------------	--

TX HASH

0x5f9b1c1705ea991d0a522df6412b7a87d518ee7c57f489f8b5427a35a8875ab

FROM ADDRESS

0x543fe4421d5f05893d09ec1b28ca2531c7db477

CREATED CONTRACT ADDRESS

0x21df986f62699644c925d80d175269111da3c57

GAS USED

607561

VALUE

0

CONTRACT CREATOR

CURRENT BLOCK

2

GAS PRICE

2000000000

GAS LIMIT

6721975

HASHTAG

MERGE

NETWORK ID

3777

RPC URLS

HTTP://127.0.0.1:7545

MINER STATUS

AUTOMINING

MINER QUICKSTART

SAVE

SWITCH

BACK

BLOCK 2

GAS USED

70663

GAS LIMIT

6721975

MINED ON

2023-10-05 13:25:46

BLOCK HASH

0xf86bcc4c6683e17aee0c22836844228ffa59c111a9f8f4ea9c71decabbcb08c

TX HASH

0x7fd29ba179586cce3c5574658642128680994732934df0f4d46a181a2df807dce

FROM ADDRESS

0x543fe4421d5f05893d09ec1b28ca2531c7db477

TO CONTRACT ADDRESS

0x21df986f62699644c925d80d175269111da3c57

GAS USED

70663

VALUE

0

CONTRACT CALL

CURRENT BLOCK	2000000000000	GAS LIMIT	5721975	HARD FEE	5777	NETWORK ID	5777	RPC SERVER	HTTP://127.0.0.1:5745	MINING STATUS	AUTOMATING	WORKSPACE QUICKSTART	SAVE	SWITCH	⚙
TX 0x5f9b1c1705ea991d0a522df6412b7a87d518ee7c57f489fdb85427a35a8875ab															
SENDER ADDRESS															
0x543EE4421d5f5893d69EC1b20caA2531C7D8477															
CREATED CONTRACT ADDRESS															
0xe1fd98df02699644C925D8d0175269111DA5c57															
CONTRACT CREATION															
VALUE															
0.00 ETH															
GAS USED															
607561															
GAS PRICE															
3375000000															
GAS LIMIT															
607561															
MINED IN BLOCK															
1															

[illegible][illegible]

EVENTS