

The background of the entire page is a dark blue, abstract digital pattern. It features numerous thin, glowing blue lines and small, bright blue squares that create a sense of depth and movement, resembling a data stream or a digital landscape. The lines and squares are arranged in a way that suggests a perspective, drawing the viewer's eye towards the center of the page.

# HIREBITS

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## WHITEPAPER

V3.2

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# ABSTRACT

HireBits is a technology platform developed to address critical problems and gaps in hiring people. While the problems we are trying to solve are focused on specific markets, we believe the capabilities of the platform can be extended to other markets. HireBits aims to achieve two things:

- Intelligently match people with companies and vice versa
- Transfer control and choice to people as we move towards an on-demand, gig economy

The platform is based on Ethereum Smart Contracts as the underlying blockchain platform. It is built for and intended to be used by people without development or programming expertise.

This White Paper talks about the overall state of the market, HireBits platform capabilities, its technology components, and its purpose.

This is not intended to be a paper on the token sale, which is being published separately.

## FURTHER READING

Website: <https://hirebits.co>

Token Sale: [Kick ICO](#)

Medium: <https://medium.com/@HireBitsCo>

Discord: <https://discord.gg/rMTDHg3>

## AN ECONOMIC CONTEXT

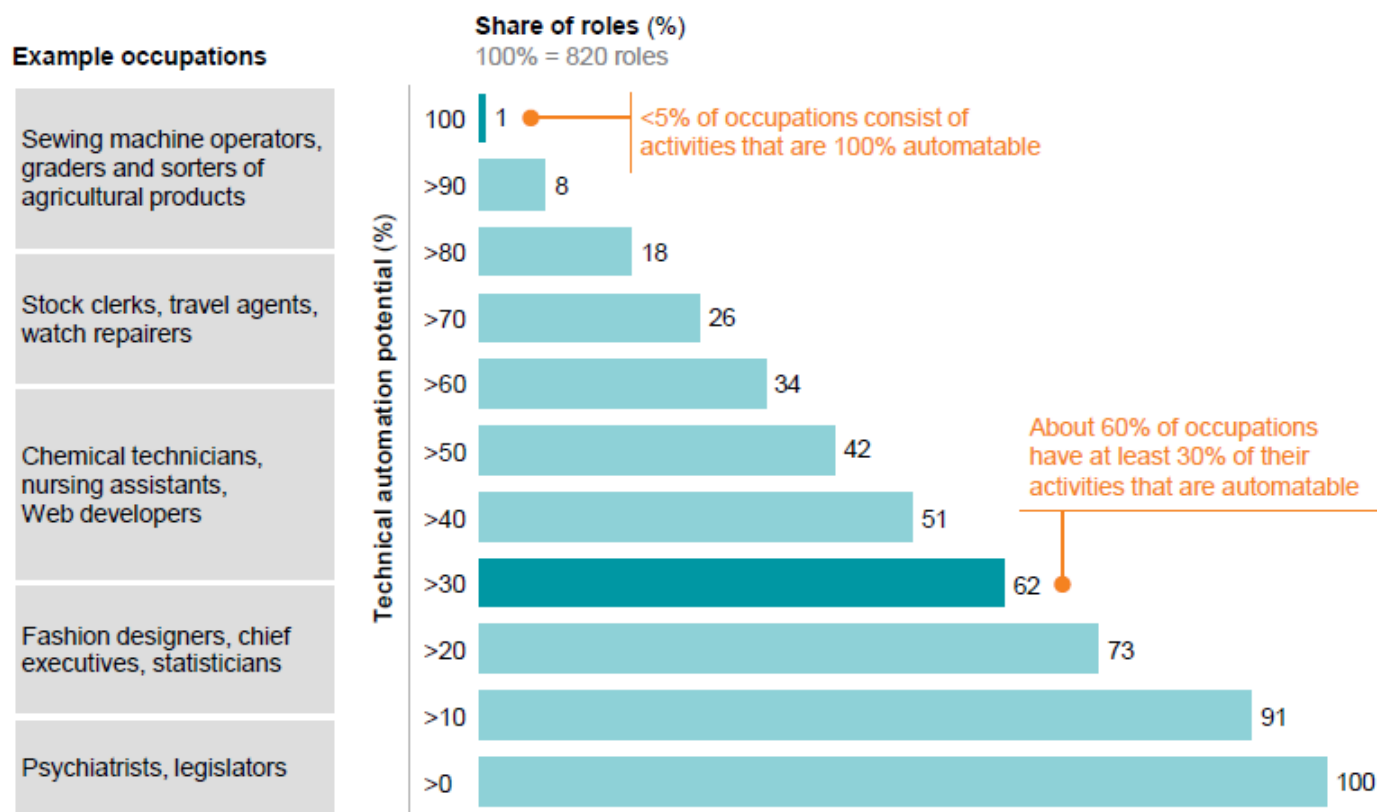
There is a widespread feeling that certain technology shifts will re-shape how the world earns a living. Robotic Process Automation, Artificial Intelligence, and robots/co-bots are not science fiction today. However effective they are today, it is reasonable that they will be significantly more effective in the next 5 years.

Economists and industry leaders are not exaggerating when they predict substantial job losses because of technology. The manufacturing industry has experienced job losses for a few decades now, since automation, Industry 3.0, and now, Industry 4.0. The IT industry has gone through its own bubbles and busts, gaining and shedding jobs as a function of a natural business cycle.

However, this time, we believe the shift will be more fundamental and, possibly, irreversible.

Some numbers can frame this discussion:

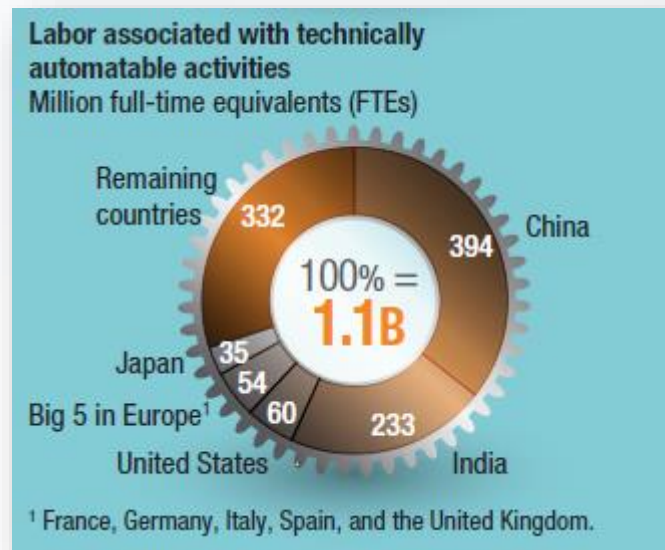
Automation potential based on demonstrated technology of occupation titles in the United States (cumulative)<sup>1</sup>



<sup>1</sup> We define automation potential according to the work activities that can be automated by adapting currently demonstrated technology.

SOURCE: US Bureau of Labor Statistics; McKinsey Global Institute analysis

While the above McKinsey analysis is based on job titles and the scenario in the United States, there are other studies for other parts of the world, with similar results. Needless to say, workers in some economies will feel the pinch much more than others.



Today, machines and algorithms can out-perform humans in certain functions. In fact, the popular Chihuahua or Muffin identification is performed by algorithms with great [accuracy](#). So, if your job involves classifying pictures as animals or baked goods, you have reason to be worried.

Automation because of technology is inevitable. Productivity will, no doubt, improve. Operational expenditure will also reduce. The new capabilities and the opportunity to do more with fewer people and lower costs will be irresistible for businesses. McKinsey predicts that any function that can be automated will be automated by 2055. However, they also caution that it could happen at least 20 years earlier, based on the speed of technology evolution.

We believe 20 years earlier is possible, particularly because IoT, Machine Learning, and AI technologies like neural networks are evolving at a rapid pace. In fact, with improved uptake of even existing technology, a lot of this automation can happen today.

## THE GIG ECONOMY: EVOLVING CAPITALISM

Capitalism, in practice, has steadily moved towards rewarding the people at the top. According to studies, workers in the US today have a lower quality of life than their grand parents, even while the size of the economy and the wealth of the wealthiest have skyrocketed. The gig economy is a natural progress of capitalism, allowing employers to eliminate 'wasted' time, compulsory social security nets, leave privileges, and others. It is also noteworthy that the gig economy is primarily driven by low and medium skill jobs such as deliveries and errands.

Some [studies](#) put the number of people (in the US and EU alone) who do gigs at 162 million, as much as 30% of the working age population.

But, we believe the gig economy, 'uberisation', will not just remain for such jobs. Based on extensive research and personal interactions with companies ranging from IT to Legal to finance, we expect gigs will shed their negative image and become a real avenue for workers to lead independent, fulfilling lives. The gig economy will eventually transfer a semblance of 'control' to workers, giving them the ability to choose the what, how, when, and how much of their jobs.

But, work remains to be done. Even in advanced economies, only 15% of independent workers have ever used a digital platform or online marketplaces. Unless this number improves dramatically, the independent workers and the customers who need them will operate with limited scope.



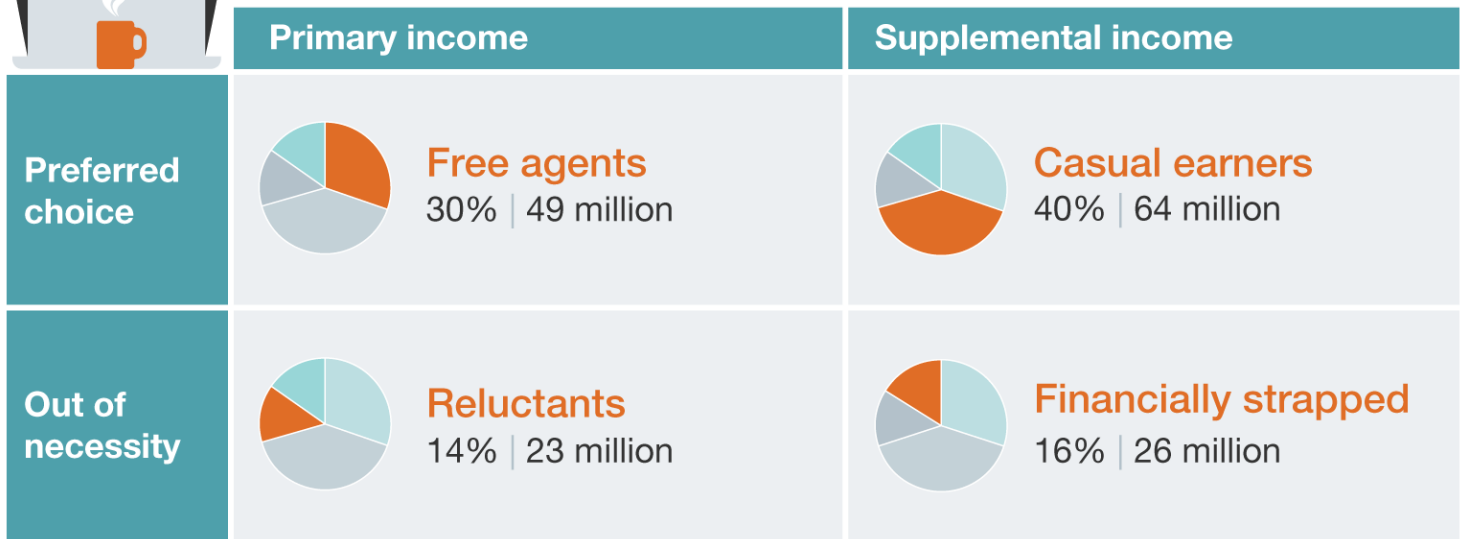
## BEING ON-DEMAND: WHO DOES THEM?

There is a diversity of people who can be considered 'independent' workers, from independent consultants to freelancers to uber driver partners. However, a mere listing of jobs for independent workers does not capture the essence of independent working or gigs.



### Independent workers generally fit into four segments.

Share of working-age population engaged in independent work



Source: 2016 McKinsey Global Institute survey of ~8,000 US and European respondents

McKinsey&Company

McKinsey's framework provides an acceptable way to classify and target independent workers. As you can see from the above graphic, not everyone wants to be an independent worker or is in it out of choice.

But, a substantial number of independent workers report satisfaction with gigs. Presumably, it has to do with choice and having control over one's hours and the pay.

Today, very few large companies use independent workers in any significant manner. An important reason is the absence of the right platforms that can broaden worker participation, enable availability matching, assure on-demand services and skills, and streamline contract enforcements. Needless to say, digital platforms can make an important change in this scenario.

This is the space HireBits aims to disrupt, by using a combination of technology, relationships, and evangelism. HireBits will be a global marketplace for gigs and jobs, transcending borders, guaranteeing trust, and promoting on-demand services across a wide variety of sectors.

# HIREBITS: A PLATFORM FOR THE ON-DEMAND ECONOMY

Statistics indicate that a fraction of people who are part of the on-demand, independent workforce actually connect through digital platforms. HireBits will change that, particularly in some of the largest job markets in the world.

## DATA AS A SOURCE OF INSIGHT

Our initiative started with the assumption that 'credible' data had answers to the hiring and matching problem. Our data collection was extensive and from multiple sources. We ruthlessly weeded out data that was incomplete or untrustworthy. GIGO. We used open source NLP libraries and tweaked them to classify and organize data. We used freelancers to review the data manually and address problems, based on clear guidelines. We believe our data repository has a lot more insight to offer. We will, eventually, open source the data repository after anonymizing and redacting personal data.

Our final data repository amounted to educational and career profiles of over 12,000 people and comprehensive data about 8,000 mid to large sized companies across IT, pharma, and engineering.

## INTELLIGENT MATCHING

Hundreds of platforms claim to use Analytics to provide the best matches, whether dating sites or job portals. Our approach to Intelligent Matching is a little different from most. It does not use keywords or classification algorithms to indicate a match. During our extensive data collection and research process, we identified certain parameters that had an outsized role in determining a successful match between employer and employee. Consequently, our Intelligent Matching algorithm considers a completely different set of parameters compared to the competition.

We believe that our classification and matching methods eliminate the bias that is inherent in selecting talent. However, this solution is not universal. We are well aware that different markets have different dynamics and biases

and there is no one solution fits all. Nevertheless, we have a solid framework we can use to expand our data collection, research, and analytics initiatives.

## EVERYTHING ON-DEMAND

While we are trying very hard to solve an important problem in organized hiring, we realize that the world is moving towards a slightly different engagement model. We're sure you have heard of tech companies crowdsourcing their testing and idea generation and rewarding people. We believe this will extend to even important, core functions, where people hop on and hop off, based on needs, skills, and project timelines.

As we mentioned earlier, not everyone in the on-demand economy is in it by choice. We believe HireBits is ideally positioned to address some challenges. We work with large institutions who have committed to pilot the platform. We are actively engaged in getting them to use HireBits as their de facto choice for not just traditional hiring but also for freelancers and independent workers.

Our work here involves two major elements:

- Evangelism: Active marketing and outreach among the talent and recruitment communities. Building trust is the need of the hour so that people can choose their paths.
- Trust: HireBits aims to be seen as a trusted platform for talent sourcing. But building a trustless decentralized platform that enforces contracts on the blockchain, we aim to bring confidence to users and companies.

## CHATBOTS

The little things make a lot of difference. The digital savvy consumer prefers the simplest digital interfaces and touchpoints. Over the next few years, it is our belief that a lot of 'search – tap – open – submit' workflows will be replaced by far simpler chat interfaces. We are ahead of the game, as chatbots will be a central part of how users – businesses and individuals – interact within the platform. It is more than a novelty factor, our early prototypes have shown improvements in the time taken to perform standard platform functions, such as creating and publishing job descriptions or running a search. As our NLP algorithms learn, we expect chatbots to be the primary interface within HireBits.

## DAPPS

The HireBits platform is not intended to be complete or comprehensive by itself. While it will address specific use cases end-end, we envision it to be a platform that will be complemented by an ecosystem of developers and the community.

Decentralized apps will help extend the core capabilities of HireBits through SDKs and APIs. For example, institutions and entrepreneurs can choose to create a geography or function specific marketplace within HireBits. Or, you can deploy an application that helps generate visual CVs or any number of other functions.

Eventually, we will have a plan to incentivize good developers with HireBits utility tokens to increase adoption and make a broader set of applications available to the user base.

## SMART CONTRACTS

Anyone familiar with the Ethereum ecosystem must be familiar with smart contracts. Smart contracts bring the benefits of the blockchain technology to diverse use cases, while reducing transaction and infra costs and creating efficiencies through automation.

At the outset, HireBits will support simple contracts between two parties. The goal is to encourage companies and independent

workers to use HireBits as a trusted platform. HireBits will enable autonomous execution of contracts between the parties.

## CONTRACT DISPUTES

Contracts come with inevitable disputes. As a platform that aims to foster the use of smart contracts, we believe it is incumbent upon us to facilitate dispute resolution. Initially, HireBits Account Managers will act as facilitators between the disputing parties. However, it will be important for HireBits to ensure more facilitators not associated with us to be available for settling contract disputes and ensuring resolutions.

Over time, each smart contract will have a specific percentage, yet to be decided, set aside for disputes. This amount will be used to pay facilitators within the platform. If no disputes arise, the amount will be refunded in the wallets of the contract initiators.

## DATA INTEGRITY & CREDIBILITY

It is common practice for employers to verify employee details in a traditional hiring scenario. HireBits integrates one touch verification initiation on the platform, connected to verification service providers. Every verified user is secured on the blockchain, making it easier for independent workers, employees, and employers to benefit from the verification.

HireBits allows independent workers and employees or third parties to initiate verification on the platform. For third party initiated verifications, the user must agree to verification.

HireBits ensures complete data integrity and security, making it impossible for users to fudge employment history or change critical details after verification by putting it on the blockchain.

Users can also be confident that the data is not mined or stolen for profit. It cannot be accessed by anyone without the right account assignments and privileges.

# HIREBITS: BLOCKCHAIN ELEMENTS

While multiple technologies make up the HireBits platform, we will talk about the ones that the readers of this white paper are likely to be interested in.

## ETHEREUM

According to the Ethereum website, it is a decentralized platform that runs smart contracts: applications that run exactly as programmed... on a custom built blockchain, an enormously powerful shared global infrastructure that can move value around and represent the ownership of property.

It has been used in diverse ways by intrepid developers. We believe Ethereum is a lot more, with untapped potential. It is not unthinkable that every application that runs today will, eventually, be re-architected for the blockchain, whether on Ethereum or elsewhere.

If you are unfamiliar with Ethereum, you should head over [here](#).

## ETH

ETH, or Ether, is the digital currency that powers the programmable Ethereum blockchain. If you are a trader or enthusiast, you must be familiar with ETH.

In any case, ETH is widely accepted (number 2 in the crypto trading markets, at the time of writing) and offers liquidity and a certain amount of stability in prices. For our purposes, ETH can be converted to fiat reasonably fast and is owned by a sufficiently large pool of people to not be a bottleneck to raising funds and utilizing them. The base unit of Ether is called Wei. See the table below:

Unit	Wei Value	Wei
wei	1 wei	1
Kwei	1e3 wei	1,000
Mwei	1e6 wei	1,000,000
Gwei	1e9 wei	1,000,000,000
microether	1e12 wei	1,000,000,000,000
milliether	1e15 wei	1,000,000,000,000,000
ether	1e18 wei	1,000,000,000,000,000,000

## ERC20

ERC20 is a protocol standard for Ethereum, containing basic functions that any token on the platform should implement to enable trading. ERC20 ensures less risk, more uniformity, reduced complexity, and enhanced liquidity of tokens created by different individuals. More importantly, ERC20 tokens can start trading on exchanges without any communication between themselves and the exchange developers. ERC20 is an important development in the progress of Ethereum because it allows token owners to simplify and standardize transferring tokens, enquiring balances, total supply of tokens, and others.