You know that feeling when you finally come in contact with the recent and greatest talking-touchscreen-waterproof-artificially-intelligent wristwatch, and you find yourself wondering, “WTF?”

Also, whatever astonishment you may be experiencing is likely balanced out by an equal amount of alarm, because let’s be realistic, technology isn’t just attractive and fun. It’s also entirely changing the world and the manners we live in it, which is a little bit scary.

These following chapters will talk mainly about two tech developments which are platforms and algorithms and how they’ve turned to the foundation of almost every new technology.

From humble however exciting starts to almost-global influence, their story is an interesting one. Therefore, be prepared to learn how they function, the type of applications they have beyond science and technology and also how to solve any complications that may be or already have been created by them.

Digital platforms and algorithms have transformed the technology world.

Do you recall the first time you saw your first touchscreen phone or virtual-reality headset? Or when your first Uber car reached your doorstep? You may have thought, “WTF?” New technologies keep coming up and they’re forever transforming the world we are.

Two huge developments are at the heart of the modern industry which artificial intelligence, in the form of algorithms, and modern digital platforms.

Modern digital platforms are founded on open-source software, which was created in the 1990s. This software is free, and it is accessible to any user and the user can edit it for everyone’s advantage, a model that’s diametrically opposed to closed-software platforms like those used by Microsoft, who ruled the industry at the time by locking hardware developers into their operating systems.

The change started with the increase of Linux, and was emphasized in a 1997 paper written by Eric Raymond titled “The Cathedral and the Bazaar.” Instead of worshipping at the altar of Microsoft, Linux users globally, from hackers to developers, pooled their resources and encouraged the free trade of knowledge.

This created a template for digital platforms, where the level of freedom and cooperation produces fast growth. Modern companies like Uber and Amazon are formed around this model, either acting as hosts or as a marketplace to connect users

However, these platforms couldn’t operate at such a level of difficulty without the algorithms that guide them.

Each and every platform is controlled by several algorithms, each intended to finish a certain task. Computer algorithms can process huge number of data in almost a little time and it can also manage difficult functions that no human could handle, like coordinating the massive Uber network of passengers and drivers.

Once it has been programmed, algorithms work independently. Due to this, they’re mostly known as a sort of artificial intelligence or AI. And their operations are just becoming more advanced.

Hence, now that you know about the principles of these two developments, let’s look at their impact on businesses and the world around them. We will discuss the platforms first.

Business and government autonomy can be increased by the platform model.

From Google to Amazon, Foursquare to Lyft, user-based platforms have proven to be greatly successful and profitable. However, what if you applied this model to other structures?

Let’s see with the help of Amazon, which is centered on numerous two-pizza teams – a phrase the company created to define a team small enough to be fed by two pizzas. Each team has the

liberty of pursuing its own goals, and it has a certain customer in mind, even if the “customer” is within the company.

Mainly, every team functions like an individual developer, each of whom adds to the communal platform that is Amazon. Dividing the company up into a lot of little teams, each doing a certain function, making it easier for Amazon to find and pinpoint problems. The issue could then be solved by realigning the relevant team.

Now that you know have an idea of what an autonomous-platform model might look like, imagine if it were to be applied to government?

Usually, governments act as a type of “vending machine.” Citizens put in their money and, they get access to a limited and predetermined selection of benefits in return such as standard options for health care, education, welfare and so forth. You have the opportunity to choose; however, you have no say in what you get to choose among.

In contrast, if a platform-modeled government recognized a problem, it wouldn’t attempt to fix it alone; instead, it would detect and then coordinate the parties needed to solve it. This is similar to the Apple App Store. Apple itself doesn’t create the bulk of the apps. It hosts a platform where users can discover and exchange the services they want.

In the same way, instead of assuming and dictating what would be best for people, a platform-modeled government would arrange the cooperation of its citizens when a problem occurs, acting as a small government that offers big services.

Algorithms have reorganized traditional business models by taking on the majority of work.

The new face of technology may be the platform model, however, it wouldn’t occur without algorithms. Therefore, how exactly might these influence business structures? Well, they’ve essentially started affecting traditional business hierarchies. Certainly, Amazon’s two-pizza teams may well have been encouraged by algorithms, seeing how similar they work.

Like these teams, some algorithms independently observe and regulate their own efficiency by what is called a fitness function. They create smaller programs to reach specific goals in different ways, and it can then check their efficiency and delete those that don't work well as well as retain only the best in service.

Think about how search engines function: they check which results are checked on the most, learning over time that these are the most significant and that whatever algorithm discoveries them is the most effective.

This is based on the notion of evolutionary biology, and it's mainly a digital version of survival of the fittest: whichever algorithm overtakes the others will pass on its code, just like how the fittest animal species pass on their DNA.

However, there's still an issue with algorithms. They're not really practically-minded entities, and they still require human guidance and control.

As a matter of fact, they are more like the mythical djinns, or genies, of Arabia, who grants the wishes of those who ask, however, creatively interpret them, to unforeseen, and usually troublesome, result.

Therefore, when you program an algorithm to do a specific function, it will automatically grant your wishes, however, remain completely unaware of any unexpected outcomes or collateral damage that it might cause along the way.

This obedience is similar to traditional factory models, except that algorithms have substituted the workers. Humans are basically the factory managers, supervising several functions and reprogramming any algorithms that misbehave.

Now, you have seen where and how these technologies are restructuring business hierarchies. Therefore, the question now is whether or not all of this is really a good thing. In the following chapters, we'll examine some worries people have about algorithmic technology.

In the industry of media and finance, the artificial intelligence of algorithms has grown out of control.

When you imagine rogue AI, you might think of HAL9000 in 2001: A Space Odyssey or Skynet in The Terminator. However, you can rest easy once the credits roll because these are far from reality. Right?

There are really rogue algorithms that are already operating, and some of them are within our reach.

For instance, the recent occurrences of fake news and filter bubbles are really the consequences of algorithmic technology. Just like those rogue djinns, the algorithms in charge of social media and search engines can only do what they're told to do. But, they haven't been programmed to spread true journalism. Their main goal is to capitalize on data traffic.

Due to this, your social media feeds are possibly full of content similar to that you've already responded to positively. Ultimately, the algorithm will filter out all ideas different from those you already believe in.

Also, these algorithms ignore whether or not something is actually true, as a lot of them can't really tell. This was made obvious in the wake of the 2016 US election when Facebook was alleged of not doing enough about the spread of fake news articles. At first, CEO Mark Zuckerberg denied this, however, he finally admitted it was an issue since algorithms just promote what is popular and common.

Although this is upsetting, this problem looks more like a consequence of algorithms than out-of-control AI. However, we're also at the mercy of a much more terrifying digital force that's merely out for its own gain and this is the modern financial market.

Things began going wrong between1970s and 1980s when shareholder value – that is, making money for the people who have company shares – became the most essential aim for businesses. This model disregards the human interests of goods and services like things that we can really buy – and emphases only on numbers.

Lately, financial centers like Wall Street were computerized to increase their speed and efficiency. Computers can detect market changes faster than humans can; therefore, high-frequency-trading algorithms give traders the advantage over others. Also, these high speeds put the market outside of human understanding meaning it is out of human control.

Together, these two developments have produced a market where computers are working faster than we can understand, with the main aim of improving short-term profits, irrespective of any human costs. You can see the results in the unrelenting pursuit of GDP and the slight increase in recessions as well as financial crashes.

And what is the worst part? This isn't even spiteful, it is only another djinn doing what it's told to do!

Digital technologies are either substituting or redefining our traditional job structure.

You are likely to have seen the effects of automation from bank tellers to ticket offices, or you might have perhaps heard somewhere that machines are taking over our jobs. However, is this really occurring?

Yes, this is true to some extent. We're presently unable to find new types of work as fast as we're making others outdated. John Maynard Keynes an economist referred to this as technological unemployment in the twentieth century, and it's responsible for a lot of our anxiety about technology.

As a matter of fact, 63% of Americans feel that jobs are less secure now than they were about two to three decades ago, and, as previously mentioned, some workers are already being substituted with algorithms. Because computers can perform tasks at fast speeds and with reliable results, it makes economic sense to use a computer rather than using humans, who are notorious – well – human.

However, technological unemployment isn't the only change caused by automation. Also, it is making a different type of working condition which is continuous partial employment.

This can be seen best in the role of Uber drivers, who straddle the line between secure employment and independent contractors. They don't work in exchange for a steady salary or offer services to numerous companies. Instead, they work for just one employer whenever they want and for whatever hour, and they are paid accordingly.

This was made possible by the platform- and algorithm-based structures. Precisely speaking, Uber drivers do all the job, and the platform which is controlled by algorithms – simply puts them in contact with customers, before taking a share of the profits.

This liberty of freedom may be good to some people, however, it is a very insecure work, as Uber is not contractually indebted to give work or benefits to the drivers.

Hence, technology is obviously having a huge influence on workforces, perhaps this isn't an issue. In the following chapters, we'll see how these changes can be nurtured into a drive for good.

Technological unemployment can be solved by re-skilling and digitally enhancing workforces.

In the early nineteenth century, British weavers in Nottinghamshire deliberately damaged a lot of the new machines that had recently emerged because the machines were a threat to their traditional craftsmanship. The weavers were following the path of the folk hero Ned Ludd, who'd allegedly done the same thing years before. This was the actual source of the word Luddite which means someone that is against technological changes.

Their worries were justified, and the new technology caused a lot of unemployment, as mentioned by John Maynard Keynes. However, Keynes, speaking figuratively, went on to define this period of worker joblessness as "growing-pains" instead of old age – and definitely, employment did ultimately bounce back.

The traditional craftsmanship of the Luddites turned into factory work, and over the course of time that turned to the office-based and service-sector jobs that are so famous today. Therefore, there is a likelihood that our present disruptions are only the milestone toward a newly dominant method of work.

Instead of refusing technological advancement, we should try to accept them and their likely advantages.

One method to do this would be to work with instead of being against the job insecurity of constant partial employment, and not attempt to stamp it out. The emphasis should be on the liberty it offers employers, employees, and customers, as well as on fixing and improving platforms instead of refusing them completely.

Another method to use technology would be for employers to augment their workers, instead of substituting them. Just like Apple Store workers who are all equipped with a smartphone or tablet, augmented employees can produce a superior customer or user experience by combining the abilities of computers with the personal touch of humans.

Augmentation is really a normal part of human development; technologies are first discovered and afterward, they are shared and finally fixed into tools in order for them to be accessible to anybody. A little of us know a lot about code, however, we have it fixed in our smartphones and we use it to complement our daily lives, which is only a more advanced form of going around with a box of matches instead of knowing how to light a fire.

By changing the present regulations and approaches, we can actually embrace new technology that will benefit us all.

The world will keep changing, thanks to the growth of new technologies. However, what will either restrain or liberate you is how you use the new technology, and whether you’re keen to work with, or against, it.

A way to begin this is by not applying old regulations to new technologies anymore. Most of the conflict between regulators and technology companies arises from the fact that specific rules don't apply any longer.

For instance, the author once had to debate a lawyer for the Authors Guild that was suing Google for scanning books into the database of nascent Google Book Search. The lawyer claimed that this was a copyright violation, however, the author clarified that the scans weren't made to be published and they were an important part of making a functioning search catalog. The project wouldn't have functioned if they'd stopped.

Maybe just like the rolling updates and community input of open-source technology, basic laws should be put in place, and the concrete regulation to enforce them should be regularly updated depending on the changing situations of technology.

However, we shouldn't only be concerned about how tech is controlled; we also need to know the reason why it was created in the first place.

If developers have aims outside monetary gain, then technology is nearly sure to serve humanity, instead of the opposite because it'll have been programmed to assist people from the start.

The main problem with the financial market is that reactionary attitudes and short-term profits will certainly lead to a dead end. The real pioneers' of the technology industry are those who look for something beyond money. Those that follow them are usually only after their own monetary gain.

Rather, you should try to add more to industry and society than the money you gain.

Use the author's own business as an example, O'Reilly Media has taught and encouraged a lot of start-ups and aspiring billionaires. It doesn't matter if the business has also made money, only that it's improved the market by motivating others.

Also, what does this culture of sharing remind you of? It is the very nature of open-source software and platforms. It's the sharing of knowledge, idea, and innovation that enables

technology to be a force that helps us before it serves itself. When that occurs, you'll only find yourself shouting "WTF?" in amusement.

WTF?: What's the Future and Why It's Up to Us by Tim O'Reilly Book Review

There is no suspicion that technology is actually transforming nearly everything about the way we live, and there is little point in attempting to stand in its way. However, whether or not society has to suffer as a result is completely up to us and how we approach it. As long as we know of the likely misuses of technology, and choose to use it as a tool for teaching and creativity, we can be rest assured to create the world of the future that works best for us.

Spot the seeds of the future.

Instead of concentrating on the flavor of the month, rather look to the fringes of technology and try and visualize yourself on what the next big revolution will be. If you find patterns such as reimagining of open-source software as platforms, you can identify the most essential trends, and select the next big thing. Also, if you're in charge of the future today, you can rest assured that it grows with noble goals and an ethical mentality.