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## How to progress your career in the world of engineering after the pandemic

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## Introduction

Special moments arise after humanity's great challenges. This is how it was after the world wars, great plagues, and now a similar situation is repeated. The world is flirting with recession and the global economy is expected to stabilize at no more than 90% of its past performance.

In these moments, we are provoked to assume our position as protagonists of our history and invited to evolve, quickly and continuously.

Based on this forecast of economic downturn, health barriers, uncertainties of scenarios, we will plan our journey step-by-step. By combining our willpower with strategic thinking, it will be possible to make this period something surmountable and learn from it several lessons for our future.

## Historic



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From what history tells us, the engineering past must have been fantastic. True geniuses drew from their observations and perceptions the ideas that supported the foundations of technique in the most varied sectors, such as basic mathematics, civil construction, movement of large weights, transport of water through aqueducts, clocks, navigation, and so on...

The profession we know as engineering today emerged in the West a few years ago.

500 or 600 years ago, when experts began to use mathematics to design military fortifications. These military professionals teamed up with craftsmen and builders to make the buildings, becoming the first true engineers in the modern sense of the word.

Until the Civil War in the United States, engineers were trained at military academies or through industry apprenticeship programs (*learn on the job*). Since the 1860s, more emphasis has been placed on formal training, which includes significant courses in math and science. For example, the Massachusetts Institute of Technology (the famous MIT) opened in 1865 with 15 students.

It was in this period that inventors began to identify with the engineering process and the engineering profession began to divide into distinct areas, such as civil, chemical, mechanical, and electrical engineering.

Special tribute is paid to the women of the past who, even when endowed with will and talent for the technical area, faced additional difficulties in advancing in their studies.

And, why are we recognized as problem solvers?

Because that's what we do.

Our job, as engineers, is to solve problems using our knowledge. The reason why there are many different types of engineers is because there are many different types of problems. But the method is always to use planning, evaluations, and checks. So let's assess the future scenario:

## Scenarios



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To put it simply, there are 2 public health scenarios to consider:

1. **Gradual and effective control of the proliferation of the virus within 2 to 3 months,**
2. Overall effectiveness of proliferation control, but the virus remains active in different regions around the world for several months;

At the same time, 2 economic policy scenarios must be taken into account:

- A. **Interventions They prevent banking crises and stop serious economic damage, but the economy returns to a lower level than before.**
- B. Effective and robust interventions prevent structural damage, rapid return to pre-crisis conditions and fundamentals;

The combination that is most likely, but with a certain degree of uncertainty, is **in bold** and is the control of the virus (1) and the economy returning to a lower level than the previous one (A).

Faced with this scenario of a controlled pandemic, but a shrinking economy, our planning must be realigned with improving the overall efficiency of processes.

Most companies around the world will lose profitability and because of this financial squeeze, we will be asked to be more productive.

Here's how to develop your career in this new scenario.

## Development

Reflect deeply on these ten tips specially designed for engineers, to help boost your career, after all, the desire to learn and grow is a necessity.

Engineers must be willing to continue learning as new technologies and techniques develop. They also need to be able to take criticism and apply it constructively

All engineers must have a baseline of skills to work on projects. This is an indispensable condition.

Being a complete and up-to-date engineer, however, is much more than being good at math and logic.

Regardless of whether you graduated recently or 20 years ago, there are steps and strategies you can employ to increase your chances of advancing your career during

all the time, some of which may be obvious, but at the same time surprising.

In addition, in these new times, communication will be more than an obligation. The nature of remote work means that communication needs to take place much more actively and accurately, as it's much harder for project managers to identify if someone is lost or stuck on an issue.

Feedback to and with the team is crucial to keeping everything running smoothly and everyone happy. This also includes knowing how to ask for help.

So, let's take a look at some of these tips that all engineers or professionals similar to engineers can use to reassure themselves that their careers stay on track in the face of these challenging times.

### 1. Learn to understand the *big picture*

As we always suggest, at the beginning of an assessment, take two steps back to understand the bigger picture. Look at the forest and not just the tree.

This may surprise many of you, but the reality is that engineering firms are increasingly



Looking for engineers who can think like business people. Multidisciplinary and talented professionals in various areas of business knowledge.

They want engineers who are involved with strategy and planning and who know their way around a balance sheet and income statements. All engineers need to understand how the total costs of producing your company's products affect business decisions.

## 2. Think outside the box.



Photo by Erda Estremera on Unsplash

One of the most used clichés in the business world today, and much more from the resumption will be thinking outside the box.

In this case, the "box" is your respective discipline. You may have gone to college to study mechanical engineering, but many of the products

Today's complexes contain software and embedded electronics; Therefore, there will be times when design problems will confront you outside of your technical discipline. Learn the basics of other relevant disciplines, such as electronic and software design.

And how do you train your brain to consistently think outside the box?

- Question the situation and the way you use it regularly.
- Always ask yourself, "Why?" "How could we...?" and "What if...?"
- Ask a child for opinions

## 3. Become a team player.



Photo by Randy Fath on Unsplash

Collaborative design is a part of the reality of today's product development efforts and design teams have now been expanded to include more and more people, many of whom are more and more people.

which are outside of engineering. All of these disciplines must come together to solve complex problems and formulate solutions to bring products to market. As a result, communication and other "soft" skills are just as important as technical knowledge.

#### 4. Be innovative and come up with new ideas

Innovation in new products is what differentiates successful companies from their competitors. Always be open to new ideas, even if they are from sources outside your group. Beware of the "Not invented here" bias that exists in some companies. Companies will reward engineers who encourage innovative ideas, regardless of their background.

#### 5. Be grateful to society

Keep in touch with your alma mater by offering to join technical societies to increase your networking reach and by writing technical papers and/or organizing technical sessions at association conferences to enhance your expertise and your company's reputation.



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#### 6. Always keep learning skills

This is crucial as the tools used to do product design and analysis are constantly changing and improving. Stay ahead of the curve and look for new assignments and opportunities to learn new technologies, enroll in training programs, and make the most of company-paid educational benefits. Also, if possible, attend organized events by professional organizations.

#### 7. Work on your *soft skills*

All forms of communication—written and verbal—are essential to the advancement of engineering. If you're an engineer looking to advance into a management role, you'll need to be comfortable talking to clients, giving presentations, and working with vendors, agencies, etc., etc.

Therefore, it is essential to develop these *soft skills*. These skills are associated with sociability, emotional intelligence, and our behavior.

#### 8. Pursue challenging tasks.

If you want to rise to the next level; Prove it. Look for leadership positions in your next project. Talk to your manager to find out how you can take on more responsibilities. It never hurts to ask.



Photo by Morgan McKnight on Unsplash

#### 9. Always think about becoming an engineer with *T-shaped skills*.

The concept of T-shaped skills, or T-shaped people, is a visualization used to describe the skills of people in teams of professionals within a company.

The vertical bar in the letter T represents the depth of related skills and knowledge in a single

field, while the horizontal bar is the ability to collaborate across disciplines with experts in other fields and apply knowledge in areas of expertise other than your own.

This way of understanding your talents exhausts the constant discussion between being a specialist professional or a generalist professional, don't you agree?

#### 10. Get closer to data science



Photo by [Carlos Muza](#) on [Unsplash](#)

Big Data is a term widely used today to name an area of human knowledge that works with very large or complex data sets, which traditional data processing applications cannot handle.

Given the proximity of the engineering professional to planning, numbers, etc., the approach to data collection and processing systems allows the engineer to make use of one more



fundamental tool for the understanding of phenomena.

To work with Big Data, one must understand the challenges of working in the area, which include: Analysis, Capture, Data Mining, Search, Sharing, Storage,

Transfer, Views, and Security  
of data

### Conclusion

In today's world of artificial intelligence, robotics, and the Fourth Industrial Revolution, you need to prepare people for uncertainty and promote agility and adaptability.

We need to strongly rethink our careers.

More than learning to memorize facts and figures, follow procedures and instructions, professionals need to "learn how to learn" and how to solve problems.

And they should be allowed to learn independently. Changes are needed at all levels. You need to put things like entrepreneurship on the resume, because with the transformation that takes place in the days

Today, many people will have to create their own jobs.

We may end up in a world where people are more likely to be self-employed than to have a secure job that lasts their entire lives.

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The Technik Group's mission is to generate value by bringing innovations and tools that will facilitate the management and engineering of industries in general, in the face of the challenges of the 21st century, seeking *differentiated and customized solutions* for their type of business.

*Greater process efficiency, improved plant and system performance* will be decisive in the return to sustainable business.

And it also has the purpose of collaborating and having effective participation in the changes and adaptations to which the Brazilian industrial sector is subject.

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