

LEADING INNOVATION THROUGH A CRISIS

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10 TIMELESS PRINCIPLES

PREFACE

A crisis is situation of uncertainty. It can lead to major disturbances in the workplace and creates unrest amongst employees. It can also be further intensified by periods of disagreement, confusion, or potential suffering. You might be experiencing a crisis right now. In such circumstances the idea of innovation can be frowned upon, but in many cases, particularly when there is financial uncertainty, innovation is simply the answer.

Employees must not lose hope during a crisis. It is important for them to face inevitable threats with courage, determination, and smiles. As an engineering leader, you must be the one to provide that hope, and take your people to uncharted waters and an island of promise.

There are plenty of publications that present fantastic leadership principles gathered through the study of great thinkers and successful people. I've read many of them, and I'm particularly interested in the ones that discuss how to succeed, despite the odds. A lot of what's out there is for a general audience, but you often need something more specific to you. I wanted to write a concise book for some time, to share the principles that I found to be extremely valuable to engineering leaders in challenging times. I decided to get it done, and I hope that it will help you respond to Covid-19, and the rapidly changing circumstances that we face.

The principles in this book are designed to help you turn challenge into opportunity, provide substantiated hope to your organisation, and get the support of those around you.

This book is meant to be a fun read. It is not academic or littered with references. It's not designed to consume your time, and it should not take more than a few minutes to get to the end.

I ask of no fee for this book, except that if you find a principle helpful, you use the questions and recommendations to put it into action. That way it will be beneficial to you and others as well.



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PRINCIPLE 1

Challenges are simply fuel for innovation

What the heck is innovation?

Innovation is bringing great ideas to life.

Why do we bring great ideas to life?

To solve challenges, and to get paid for doing so.

Which means that without challenges there would be no need for innovation.

So, challenges are good, even those that seem bad.

Every challenge adds new requirements that we can respond to, and in turn get paid for. In fact, you could argue that the biggest challenges are actually the biggest drivers for great feats of innovation and indeed engineering.

Covid-19, Brexit, recessions, etc. are no different.

Question: What could you do to flip the challenges you face into opportunities?

PRINCIPLE 2

The solutions are waiting for you to release them

I was supporting a project with a big aero company some years ago, when the team ran into a crisis. The programme leaders were pulling their hair out over some conflicting requirements that were limiting the capabilities of the system, and they didn't know quite what to do.

I spoke to many people about the problem, and each person shared lots of relevant information and many of their opinions based on previous experiences. I appreciated everything they said, but then I met a fairly junior engineer who really impressed me. When I asked about the design issue, he showed me some graphs that he had produced to resolve conflicting technical requirements. I thought his work was cutting-edge and shared some ideas with him. He was excited and responded immediately. He quickly provided a prudent plan to solve the problem objectively, with real data.

Question: What could you do to enable your people to deliver the solutions that will make the difference?

PRINCIPLE 3

Shut down negativity

Holding on to past experiences, old beliefs, and negative stories gives you an excuse to continue to repeat the same behaviour. Also, when people around you complain, you receive so much annoying communication, and every time you check the news 8/10 stories are depressing, the effects on you become evident. And a negative mind rarely solves anything, so try turning off all forms of negativity for a while.

When you tune out all the negative headlines, you give space to some positive ones which can actually make a difference.

Try these:

- The innovation that I am responsible for is bold and energising
- Our stakeholders are going to be incredibly impressed by our results
- We are so much more organised and efficient than we used to be

PRINCIPLE 4

Ask experts to help you break down barriers

A friend of mine works with sensors, he not only works with them but is pretty obsessed about them. A few years ago, a design manager called him to ask about fitting some sensors to helicopter blades for real-time measurement of performance parameters. She said they planned to use glue, but were not sure it would work. She was stuck, but she'd asked the right person.

My friend went on to describe the intricate issues involved when bonding sensors using glue. He explained the impact of rotation on the measurements and promptly advised against it. The manager stated that it was obvious that he knew exactly what he was talking about because her team were facing the same issues that he described.

She asked for him to get involved and guide them through their problem. He did, and of course saved them a lot of time, money and headache.

Question: Do you seek external experts to help you with your most pressing problems?

PRINCIPLE 5

Relax and work through the problem

You're dealing with many people.

You've got a lot on your mind.

You're working long hours to meet the deadlines.

You're working on something really complicated.

But you just can't seem to figure out how to solve the problem!

Until...

...You realise it's taking its toll on you, and you know you need to take a break. You do different things for some time.

You walk. You talk. You see. You hear. You smell. You taste.

You touch. and take time out to go on a long walk.

And then comes Monday and you're back at work. But you've planned to run a workshop with people who can help you work through the problem.

By the end of the week, as if by magic, it's solved. You did it. You celebrate.

Question: Are you struggling to relax, or with the process?

PRINCIPLE 6

Design your dream and surround it with carrots

Question: Can you state, right now, what you want to achieve? If so, do you have a burning desire to achieve it?

Fixing goals that you have a burning desire for may not be easy. It may even involve some painful self-examination. But it will be worth whatever effort it costs, because as soon as you are clear on your goals, you can expect to achieve them and enjoy many advantages, that come almost automatically.

The next step is to determine what other people around you really want. It's easy to assume. But that won't help much. You need to investigate, ask questions, and thoroughly understand them. This applies both to your superiors, and those that report to you.

The next step is to surround your goals with carrots that enable the goals of others. Thus, providing the motivation for others to support you in achieving your goals.

PRINCIPLE 7

They will be enthusiastic, if you are enthusiastic

Emotions are not always provoked by reason; emotions are almost always provoked by action. But how do you act enthusiastically? There are many ways. Here are a few tips to help you act enthusiastic when you talk:

1. Speak loudly – this is especially helpful if you struggle to speak to audiences
2. Speak fast – it suggests that you can't wait to tell them about it
3. Emphasize – when you take the time to emphasize the words that are important (like *YOU*), your audience will sense your enthusiasm
4. Move – the more you move your hands and body, even if it's not in sync with your words, communicates enthusiasm and passion
5. Smile – enthusiasm is a happy feeling that everyone wants to feel and there is probably no better way to consistently communicate your happiness than smiling

Question: Do your colleagues share your enthusiasm?

PRINCIPLE 8

Believe it, and you will achieve it

Not long ago, people would laugh at ideas that were ridiculous to them then, but are taken for granted today: space shuttles, nano-technology, machine learning, AI; or everyday necessities like television, wireless internet, automobiles, jets in the sky, satellites; computers, smart devices, etc.

Every one of these great inventions was conceived and achieved by men who believed it would happen!

Modern technology became a reality because man built into machines electrical circuits and software, which in many respects function like the known electrical activity of the nervous system of your own physical body. What this shows is that whatever your mind can conceive and believe, you can achieve.

Question: What will you believe in order for you to achieve?

PRINCIPLE 9

Fill in the middle

I had many plans for 2020. I had some great ideas that I wanted to work on. I had started some really interesting conversations which had huge potential. There were also some really interesting projects that we had invested time, money and energy into. But then the world was faced with perhaps the biggest crisis we could imagine: a virus that caused many to sadly die, and did a lot of damage everywhere. In my industry, many companies were forced to close their doors. Many good people were laid off and suffered.

My company went into survival mode and it was incredibly stressful and tough for me, personally. I knew we had to do something different and adapt, but we didn't really know what to do. This remained the situation for months, until one day, when I read a book that was sent to me by a stranger. It was a short book without many words, but it provoked me to make a very important choice.

I decided to

The result of that one choice was so profound that we ended up in a much better position. The challenges we faced turned out to be a real blessing for us, and today we enjoy the innumerable benefits. From time to time I look back and think: if I didn't make that choice, what would have happened?

PRINCIPLE 10

Do it now, because you have to

I used to be a clever man,
Because I always had a plan,
But when my work just wasn't fun,
I simply couldn't get it done.

I worked harder for a while,
But then I had a bigger pile,
Until one day I'd had enough,
I cried and said I wasn't tough.

But my mission was incomplete,
So, I quickly jumped to my feet.
To this challenge I refuse to bow,
And I said to myself

Do it now!