



INNOVATION NEEDS PERSEVERANCE

Dr. Souheil ElHakim

INTRODUCTION

This is a real-life story from our CEO, Souheil ElHakim, on how perseverance, compassion, expertise and building know-how and working relentlessly can lead to success. This is about a PATENT received years after its submission for a disruptive innovation idea for a medical device. We wanted to share it to set an example for the young generations as bio-medical engineering increasingly becomes a popular profession in our country and worldwide. As we say, patience is virtue...

THE STORY IN HIS OWN WORDS

"The work behind this patent goes back by about 18 years. I was then fascinated by ultrasound technologies. The ability to "see" inside the body using harmless sound waves was simply magical.

I spent many of my weekends and much of my salary to build through many trials a disruptive solution to C-Arm technology – an ionizing imaging modality used by surgeons as guidance to insert an implant for example a pedicle screw in the spine to stabilize the spine for patients with spine diseases. In the spine case, if the pedicle screw is not optimally inserted, the stability of the spine can be compromised. The standard used today is C-Arm where a surgeon shoots X-Ray images to track the position of the pedicle screw or the implant during insertion. A typical surgery requires many images and many spine surgeons perform at least two or three surgeries a day and thus are exposed to over-dose radiations daily. The C-Arm dose is low so medical staff does not like to take precautions by wearing protection and in general they underestimate the amount of radiation they are exposed to during surgery. However, being exposed every day to low doses of radiation is hazardous, and the results are deadly. I know at least 2 surgeons who have gotten sick likely from exposure to radiation. The patent describes ultrasound-

based technology as an alternative modality to C-Arm. It is non- ionizing, therefore, safe and repeatable making it also much less costly so any hospital with limited budget can easily acquire. It is mobile and can be used in field hospitals as well. In the OR, it takes much less space than the C-arm while using less power. I'm very happy that few years later KAIMRC, the top national center for medical research in Saudi Arabia had interest in my work and funded the first prototype. But what is most rewarding was working with Dr. Ahmed Ferayan a neurosurgeon who made this project nothing less than a very educational and enjoyable journey.

For me, 18 years of work started in Beirut without receiving any funding, no incentives, and no environment where I can outsource parts for my project, just an idea with very limited means. This is a proof that you can do anything you want if you believe in yourself, focus on what you want to do and invest in the efforts. I did not work on it for 18 years continuously, but it took 18 years to have a patent granted. This a good illustration for anyone who is looking to create or innovate but keep complaining about the system or seeking a “better” environment by moving to other countries because they cannot get enough support on their own to achieve their goals. You can create your own destiny if you truly believe in what you want to achieve. The rest is just planning and trials. Imagine if every scientist, young or experienced, puts an effort to make a difference, the results can be outstanding for mankind!”



Dr. Souheil ElHakim

We, as Bicakcilar, try to set an example of how being visionary and having the perseverance can actually pay off even if it is years later.

In our sector, there is nothing that is better than the feeling of contributing to human life!
