

Reflections for — the Consultants



Sunil Godse has 34 years of experience in Software industry. The experience spans R&D, Sales, Marketing and P&L Management.

He has completed B. Tech (Electrical) and M. Tech (Computers) from IIT Kharagpur.

His interest in AI goes back to 1985 when he developed the first AI-based system for the analysis of the Electrical Circuits.

He has immense interest in Data Science/AI techniques. His company Klugheit Software's goal is to 'Convert Data for the Business Value'.

The Mahabharata Epic has a story of Arjuna. Arjuna was tasked to use bow-arrow and hit the eye of the fish by focusing on its reflection. The fish was swimming in a bowl at the top and reflection was seen below in the water. Arjuna focused on the image in the reflection, used his archery skills to hit the fish.

I see the analogy between this story and what consultant would be doing in the age of AI.

Nowadays, data is captured from all sort of actions. The data thus captured, reflects the reality. The consultants have an opportunity to spot these reflections, collaborate with the Data Scientists and arrive at the interesting solutions.

The engagement between customer & consultant is the key. The discussions, factory visits, end user interviews provide an opportunity to consultants to keenly observe and spot the areas where data science can be applied.

Let me give a couple of real-life examples.

In past, I have interviewed a set of Radiologists to understand how deep learning can be applied to the Radiology. In my first discussion with a Radiologist, I pointed to a Chest X Ray laying on his table and asked him how he will diagnose this. He said, "I start by reading the prescribing doctors report. The report has pointers to the problems that patient may have."

I immediately wanted to ask him: Why do you need to read that report? Why can't you look at the X Ray and state your observations? With time, I have learned, to exercise caution. At times, such questions are foolish and at times, they are not politically correct. I kept quiet.

This pattern was repeated with few more Radiologists. Subsequently, I was in a discussion with a senior doctor who heads the Radiology Diagnosis Centre. He said that the Radiologists are pressured for time. MRI reports can have

100+ image slices. So, that is lot of work. Hence, it makes sense to get an idea of the background of the patient and narrow the investigation. Do they miss out something the process?

In another paper**on Radiology, it stated that at times, Radiologists end up missing few critical points. This is neither intentional or nor reflection on the capabilities of the incompetence in the part of Radiologists. This happens due to natural bias, etc. The paper has more details.

With this, I spotted the reflection of the problem. Why don't we use AI's deep learning technology to identify set of anomalies in the image? These anomalies can be presented as a checklist for the Radiologist.

Here is another example. Once, I was in discussion with the Senior Manager in an automotive company. While describing his operation, he talked about their high-end CNC machines.

They have hundreds of those machines. Each such machine has 10-15 tools. These tools cut the incoming metal block to a specified shape.

Each tool has a specific life span, that depends on tools utilization. Some of these tools can work effectively up to 8 hours, some for 48 hours and so on.

Thus, the factory had thousands of these tools, spread across hundreds of CNC Machines. Depending on the workload and the type of cutting requirements, these tools will need replacement at varying time.

If not replaced on time, the quality of the end-product will be impacted.

Currently, this replacement is managed by the machine operator and is prone to the errors.

With this, I saw the reflection of the problem in the data. Each machine has the complete data on the utilization of the tools. Why not capture this data, centralize it and use it to identify the tools that need replacement?

Finally, do all such discoveries always result in the business value. The answer is not necessarily. It depends on multiple factors such as quality & quantity of data, ability of the organization to embrace the change.

**<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC5265198/>