

## Predictive Analytics-Now a way of life



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### **Manish Soota**

From Cassandra foretelling the destruction of Troy to prophecies of the three witches in Macbeth, the ability to see the future has always fascinated us.

Though as a civilisation, we have hardly tried to embark on it, other than the occasional lingering on astrology, tarot cards or reading tea leaves. Lately though with the advent of analysing vast amount of data has allowed us to create forecasting models that have made it excessively simpler to foresee what's coming.

These forecasting methods aren't entirely novel. For years, we have been leveraging statistical models to accurately forecast weather or activity inside a volcano. What has changed recently is the ability to handle larger and wider sets of data. Big data technologies have made it possible to analyse and deliver information based on statistical models enabling decision making. Let us look at a few examples:

### **Disease Outbreak Forecasting:**

The recent outbreak of the Zika virus in South America and Oceanic islands has created a huge panic globally. A similar scenario was spotted during the Ebola virus epidemic as the disease spread widely from Liberia, Sierra Leone, and Guinea to isolated cases in Spain and United States. The learning from the outbreak of Ebola virus allowed health officials to leverage data from census, health clinics to establish details of the outbreak. With Zika virus, many countries including India (which offers a similar environment to the virus) are considered vulnerable. The ability to create predictive visualisations based on existing data points would allow health officials to take precautionary measures that can contain the outbreak.

## Predictive Policing:

Minority Report, the 2002 blockbuster directed by Steven Spielberg starring Tom Cruise abided around the world of Precrime, where citizens are apprehended and arrested before committing a crime. Based on the short story by Phillip K. Dick on the same name, the story paints a Utopian world where crime can be kept off streets through mutants called pre-cogs. Though not to the same levels of Precrime, today crime forecasting utilises analytical techniques to create statistical predictions.

The process involves integration of data collection fed for analysis which delivers predictions to the law enforcement operations. It allows police to increase resources in areas of greater risk, or address factors that drive certain risks. Over the years, US law enforcement has been leveraging various tools from hot spots, regression methods, grid mapping to risk terrain and spatiotemporal analysis. Such precautionary tools are expected to reduce the crime rate and in proper utilisation of efforts of law enforcement units.

## Seeking Donations:

For a nonprofit organisation, identifying potential sources of donations are often hard to come by. Especially, under citizen driven initiatives, often the strategy is to cover large number of people, and the donation amount is more or less the same despite the purchase parity of the donor. Such mass targeting models often falls short of delivering expected results. Predictive analytical platforms can help nonprofits make better decisions and identifying methods that would "maximize the donor value". Leveraging historical donor data, nonprofits can plan which donor to target and for which cause. They can also better utilize the time of field agents by creating Google Maps of target locations.

## Allowing data to pave the way for us

Predictive Analytics is not about "Predict and Analyse", but the converse, i.e. "Analyse and predict". Today enterprises are trying to identify potential use cases where they can utilise predictive analytics. From customer retention, fraud detection to drug prediction there are lot of opportunities that organisations can utilize if they have quality data, clarity of thought in terms of what they want to achieve and how it would help their business.

Lately, the advent of automotive predictive analytics allows data scientists to spend their valuable time more on problem formulation and domain interpretation instead of data modeling. This has turned the spotlight as these models and visualisation techniques are now leveraged by end users like marketers and executive management.

In conclusion, while advancement in big data technologies are bringing us cutting edge tools which would help us to make the right decisions, at the end of the day we have to keep our confirmation biases away and let the data tell the way ahead.

*The article is authored by **Manish Soota**, VP-Pre Sales & Solutions, **CIGNEX Datamatics***

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