Analytics for Risks Management

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TURN YOUR DATA INTO RISK ANALYTICS
Due to technological advances and general transparency, the data collected is now more important for risk management than it has ever been before due to various changes in:

- **Scope**: the range of topics from ever-expanding sources of data is now readily available
- **Scale**: the sheer quantity of data collected is unprecedented and is expected to grow by 40% per year worldwide
- **Detail**: due to mobile phones, internet, and other technologies, minute details on people can now be tracked at an almost real-time level
- **Speed**: modern IT systems allow organizations to quickly access information, enabling near real-time feedback about decision making

Risk analytics offers a means of transforming these data assets into actionable insights that can be used to significantly impact performance.
Why risk analytics?

Boeing 787 cockpit

CEO/MD of a large institution

Which on one would you rather be?
Risk Analytics

What it is:
Providing **intelligence** to management from data and information to make decisions on uncertainties faced by the organisation.
Edward Snowden case 2013:

In a December 2013 letter to the people of Brazil, Snowden wrote:

"There is a huge difference between legal programs, legitimate spying ... and these programs of dragnet mass surveillance that put entire populations under an all-seeing eye and save copies forever ... These programs were never about terrorism: they're about economic spying, social control, and diplomatic manipulation. They're about power.”
‘People’s lives are at risk’: Intelligence chief blasts Snowden during Senate hearing

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James Clapper, Director of National Intelligence listens to testimony during a Senate Judiciary Committee hearing on Capitol Hill, October 2, 2013 in Washington, DC. (AFP Photo / Mark Wilson)
Risk Analytics – genuine applications?

Case study 1:
You have just bought a car from a yard, while on your way home, you tweet “I just love my new Mercedes, Ngong rd Posh car dealers, you are the best”.

Before you get home, you receive a call from your health insurer....“good day Mr. James, a beautiful day as is, we would like to inform of our special high end motor vehicle cover which would be offered to you at discounted price since you have a health cover with us........”
Risk Analytics – genuine applications?

Case study 2:

It's Friday afternoon while you are preparing to go home after a long week of 'hard work'........

A warning letter lands on your desk that leaves you shocked asking yourself.......how did they know?

During the week, you had made a deal with a cousin who is a selling latest movies for Shs.50 in town to supply him since the high speed internet in your office can download movies so fast. In a week, you managed to download 500 movies.
Risk Analytics – genuine applications?

Case study 3:

You are a regional manager of a large logistics company and recently you have been transferred from Nyanza to Mombasa region. This is the first time you have worked in the region.

First day walking to your new office, there is a notice board with interesting tables, graphs, dashboards etc. Taking a closer look, the following information catches your eyes:

- Losses of cargo in transit have always occurred along Likoni area and it occurs between 8pm and 10pm.
- Staff turnover of drivers has increased to 60% since Jan 2014 while it was 5% for the last 5yrs
- Average of 5 truck accidents per month has occurred with cargo getting lost and the drivers disappearing from scene since Jan 2014 etc.
Risk Analytics – genuine applications?

Case study 4:

Ball pens suppliers colludes with procurement department to be selected to supply pens and provides his cartel companies to quote a higher price while he quotes a lower price but already inflated (Shs.100 per pen) to cater for kick-back to the head of procurement and her team.

Procurement committee meets and approves the tender which goes for LPO raising in Finance unit.

Finance manager is required to record the price in a risk management system which sends a warning signal to finance, procurement and internal audit.

The tender is investigated and all anomalies identified and therefore cancelled.
Risk Analytics – genuine applications?

Case study 5:

Recently, staff absenteeism has been increasing especially towards end of the month. It has also been noted that the company's medical cover cost has been increasing at a high rate.

The new CEO is getting concerned that performance is being affected while cost of medical cover is increasing.

Information and data analysis creates a relationship with performance target from top management with the most popular illness being stress-related.

The CEO implements a gymnasium, employee of the month award, bonus for meeting target, performance measures not related to targets.

Analysis 6mts later confirms a reduction in absenteeism and the next financial year medical cover is reduced through negotiation with the insurer.
Developing a risk analytics capability

“The journey from the traditional business which is dominated by historical data and focus on what has happened to one that is strategic and where risk management is an integral part of every business decision is primarily a journey from relative ignorance and lack of data, through the harnessing of relevant quality data sets to the turning of that data into intelligence”......David Tattam.

The journey is not easy and needs to be travelled in a controlled and progressive manner.
Key points to consider

Current status. What is the status of the current business?

1. How are decisions currently made?
2. To what degree is risk intelligence used in decision making?
3. What risk data is currently available and what is its relevance and quality?
4. How is the current risk data being captured and stored?
5. How is the current risk data being analysed and reported?
Key points to consider

**Data Collection**

1. What key data should be collected?
2. How will the data be collected?
3. What are the sources of data?
4. What system will be used to collect and store the data?
5. What is the quality of the data?
Key points to consider

Reporting the data in a meaningful and relevant way

1. How will the data be turned into intelligence?
2. How will the converted data be reported?

How can the data sets be used for true risk insights?

1. What tools should be used for data analysis?
2. How should the analysis outputs be used?
Steps to developing a risk analytics

Step 1: Determine the key business questions you would like to answer.

For example, who is my potential customer? Where should I focus my marketing campaigns to? Which customers should be offered which benefits? What is the most optimum insurance premiums by product, age, location etc?

NOTE:

Business questions are driven by the Risk Profile – the uncertainties affecting your objectives.
Steps to developing a risk analytics

Step 2: Establish the data source requirements.

Data requirements will be driven by the business questions you will need answered. You may have the data internally or you may have to obtain from external sources.

Beware of the legal complications and resistance from other institutions to readily share data – Privacy laws.
Steps to developing a risk analytics

Step 3: Digitise records and Reconcile core systems within a single database – the Data Warehouse.

The data in the archives and registries in our organisations has a lot to tell and so is the data in the various applications used by the organisation.

Organisations are best positioned to optimise on the data they hold within before going outside in search of more data.
Steps to developing a risk analytics

Step 4: Use data mining approach to mechanically and automatically clean unmatched data points.

Cleaning data ones in the warehouse is vital to ensure that accurate relations and patterns are establish using unique identifiers in the population.
Steps to developing a risk analytics

Step 5: Document processes to maintain and use of the data warehouse.

Clear instructions must be developed to ensure the data in the data warehouse is well maintained as to its currency, accuracy, reliability and relevance.
Steps to developing a risk analytics

Step 6: Develop guided analytics tool and dashboards.
Data scientists are well positioned to develop sophisticated routines and algorithms to analyse the data available to you based on the business questions you would like answered. The parameters used for this purpose are determined by risk profiles that must be understood very well by the institution.

Guided Analytics

- Operational dashboards & visualizations
- Recommends action buckets to front-end business users with automated decision trees and algorithms
- Creates value by optimizing day-to-day decisions & execution, regardless of skill

Dashboards will enable you to be the pilot in a cockpit. Make decisions in a snap shot by using guided analytical tools.

Predictive Analytics

- Data enrichment & predictive modeling
- Recommends campaigns (individual targets, product & communication) connecting to campaign engines
- Creates value by transforming marketing: better targeting, better conversions
Steps to developing a risk analytics

Step 7: Train staff.

For continuity and self-sustainability, staff within the organisation must be trained to understand the sophisticated routines and algorithms parameters. This enables the institution to adopt to the changing risk profile as the environment changes.
Steps to developing a risk analytics

Step 8: Set workflow rules and escalation systems.

Link output of analytics to risk appetite and integrate to decision making through predetermined workflow rules and escalations.

Without a clear linkage to this, the organisation is still prone to complacency and staff who may have self-interests failing to take prompt and appropriate decisions.

Create automated workflow rules to send alerts at the appropriate levels and track actions being taken when the alerts are sent out.
Risk Data to Risk Intelligence

Boeing 787 cockpit
Q & A
Thank You

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