INSIGHT WITH PURPOSE

OUR GUIDE TO SOCIAL HOUSING ANALYTICS

IwP

Contents

3 1.Introduction

4 2. Top 10 Usages of Analytics

5 3. What is Data Mining, Big Data, and Business Intelligence ?

5 4. Conclusion

6 5. About US

1. INTRODUCTION

The Social Housing analytics landscape consists of a wide array of capability. With vendors, agencies, and consultants approaching analytics very differently, gaining a clear perspective on how to deploy an analytics-driven capability can be challenging.

We have therefore produced a layman's guide to analytics in order to help our clients make sense of these of these new terms.

In simple terms, the social housing analytics landscape consists of:

(a) Reporting and software that allows you to retrieve information from a housing/finance database

(b) Data and statistics-driven predictive modelling that enables customer segmentation

Setting aside the latest buzzwords — such as big data, data mining, and customer intelligence — the following list describes the key categories of analytic capability used by social housing organisations.

The relative importance and utility of each category are largely dependent on the sophistication level, budget, and size of the association. However, it is a universal maxim that some combination of performance management reporting and customer segmentation is required to effectively manage the organisation. Accordingly, the following types of analytics are generally available and can be utilised by housing organisations.

2. THE TOP 10 USAGES OF ANALYTICS

1.Standard Reports - Typically generated on a regular basis, standard reports describe what happened in a particular area. They answer the questions "What happened?" and "When did it happen?". They are not useful in making long-term decisions. Examples include monthly or quarterly financial reports.

2. Ad Hoc Reports - Generally, ad hoc reports let you ask questions and request a custom report to find the answers. They answer the questions "How many?", "How often?", and "Where?". A custom report that describes a welfare reform campaign performance is an example of this type of report

3. Query Drilldown or On-Line Analytical Processing (OLAP)- Query drill down allows for some discovery. OLAP lets you manipulate the data to find out how many, what geography, what age, etc. Query drill down and OLAP answer the questions "What exactly is the problem?" and "How do I find the answers?". An example of this is sorting and exploring data about different types of customers and their rent payment behavior.

4. Alerts or Triggers - With alerts or triggers, you can learn when you have a problem or opportunity and be notified when something similar happens again in the future. Alerts can appear via email, as a flag within the software, or as red dials on a scorecard or dashboard. They answer the questions "When should I react?" and "What actions are needed now?". An example of an alert or trigger would be an email to a finance officer indicating that interest rates on the bond markets have changed.

5 Statistical Analysis - With statistical analysis, housing associations need to use more complex analytics, like frequency models and regression analysis. We begin to look at why things are happening using customer behavior data and then begin to answer questions based on the data. Statistical analysis answers the questions "Why is this happening?" and "What opportunities am I missing?".

6. Forecasting - Forecasting is one of the most useful analytical applications, as it enables effective resource and budget allocation. It answers the questions "What if these trends continue?", "How much is needed?", and "When will it be needed?". As an example, RP's can use forecasting to predict how universal credit payments will affect their overall income, enabling budget allocation and strategy refinement

7. Segmentation or Descriptive Data - Descriptive data use for example customer attributes to describe customer behaviour or classify customers into groups. Generally, it uses historical behaviour to classify individuals, enabling future treatment strategies. It answers the questions "What group or classification does this individual belong to?" and "What characteristics does this individual have?". Examples of segmentation or descriptive data include address, age, income, marital status, the presence of children in the household, and recent credit history.

8. Predictive Modeling - Predictive modelling analyses historical and comparative data, say about customers to predict a future behaviour. It answers the questions "What will happen next?" and "How will it affect my organisation?". Examples of predictive modelling include likelihood to respond to a direct mail solicitation, and likelihood to pay rent

9. Decision Support System (DSS) or Prescriptive Analytics - Prescriptive analytics synthesises data to make predictions and then suggests options to take advantage of the prediction. It describes what you should do and prompts a specific action.

10. Optimisation - Optimisation supports innovation. It takes your resources and needs into consideration and helps you find the best possible way to accomplish your goals, answering the questions "How do we do things better?" and "What is the best decision for a complex problem?". An example using optimization would be: Given business priorities, budget constraints and available technology, what is the best way to optimise our development spend to meet our development objective?

3 WHAT IS DATA MINING, BIG DATA, AND BUS INTELLIGENCE ?

The concept of analytics is not new. However, with the proliferation of applications with high volume transactional data and relatively inexpensive infrastructure to store and manage this data, more not for profit sectors are harnessing more data for analytics purposes. This has led to an increasingly sophisticated means of managing and exploiting information.

Generally speaking, the needs of associations are relatively modest compared to other sectors with greater volumes of data and more ample budgets. The following terms are often mentioned by vendors, agencies, and consultants — and more often than not, they are being applied to far more simple concepts than their respective technical definitions.

Data Mining

What it is — Data mining is the computational process of discovering patterns in large data sets involving artificial intelligence, machine learning, statistics, and database systems.

How we misuse the term — Data mining is often misused to mean any form of large-scale data or information processing, for example collection, extraction, warehousing, analysis, and statistics.

What we typically mean — Often, we mean the more general term "data analysis" or "analytics."

The implication for RP's generally speaking, means you will require predictive analytics generated by traditional statistical analysis. A statistician will typically deploy software that uses logistic regression or CHAID (goodness of fit) to create a predictive model, score/rating, or segmentation strategy for you. Realistically, sophisticated data mining may not be relevant to your typical data set.

Big Data

What it is — Big data is a collection of data sets so large and complex that it is too difficult to process using standard database management tools or traditional data processing applications. Big data typically requires massively parallel processing or supercomputing platforms consisting of thousands of servers.

How we misuse the term — Big data is often misused to mean any large customer data set or large database that aggregates data from multiple sources.

What we typically mean —Often the more general terms "large data set" or "multi-sourced database" are more accurate. The implication for associations — fortunately, you may not have big data. Instead, you have "a lot of data."

Implication for RP's is that even if you have a significant amount of data, it can be effectively managed in a standard, cost-effective Oracle® / SQL/ Excel database, and accessed via standard query tools systems.

3. CONT.

Business Intelligence Application

What it is — Business intelligence applications are a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information. They are also often referred to as a "decision support system."

How we misuse the term — Business intelligence applications are often referring to an ad hoc query and reporting tool that extracts information from a data mart or data warehouse. Whilst ad hoc query and reporting is technically a business intelligence application, it is the most primitive.

What we typically mean — Often the more general term of "ad hoc query and reporting tool" is the most accurate, using a "business intelligence platform" to refer to a more sophisticated decision support system that incorporates rules-based decision logic and prescribes specific outcomes or actions.

The implication for RP's — Generally, your CRM, finance or HR system comes with ad hoc query and reporting capability. More sophisticated CRM systems for example will often come with decision support capability.

4. CONCLUSION

Analytics-driven insights can be made extraordinarily easy. Too often, complication stems from collecting data and then trying to use analytics when attempting to determine what to do with the information.

Ultimately, if you are able to ask the right question, there is either a standard predictive or prescriptive analytic that will provide you with the answer or a simple feature that will enable you to query your database to obtain the answer.

For most association, a simple decision support and reporting and predictive analytics capability offer a direct path to answering your most complicated data analysis challenges.

So, how do you get started? Craft a simple but high impact question like, "How does my historical financial performance compare with the best performing associations and what is the predicted rate of improvement of my peers/sector versus my association?

With our **Housing Performance insights** database – we provide an overall financial capability score for your requested peers, that enables you to compare your relative historical performance. We are then able to predict the rate of improvement of your peers and the sector overall. You are then able to compare that with both our theoretical prediction for your association and your budgeted improvement.

With this predictive and prescriptive analytics combination, you are well on your way to deploying a cost-effective analytics strategy providing you with greater performance insights giving you improved decision making.

5. ABOUT IwP

We are George Powell and Peter Lunio, the founders of the company. Previously we worked for RSM (formerly Baker Tilly for over 10 years) leading their Social Housing consultancy practice and we also delivered their successful Back Office Benchmarking (BOB) service which at its height had 50 clients. We have worked in the sector for over 10 years and Peter recently presented at 2018 NHF National Finance Conference.

We recognised at the time that the sector was primarily using the data from current sector benchmarking service providers merely as a compliance tool, whilst many of our BOB clients were also looking for data that provided them with more performance improvement insights.

So, in 2016, we developed a peer performance comparison service utilising the tools developed by analytics specialists. We left RSM and launched IwP because that's what we try and do, provide insights with a specific performance improvement purpose. We have recruited a specialist Data Scientist, Mikel Llakmani, to help us apply analytical techniques to support our analysis.

Our aim and motivation is to try and provide you with meaningful validated information about the performance of your association, to help you improve.

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