

Performance Management Case Study

Using Data Analytics and Dashboards to Improve Performance

Introduction

In today's uncertain and changing legislative environment for Registered Providers (RPs), it is essential for management to be fully on top of their organisation's performance so that any corrective action can be taken as quickly as possible. There are numerous risks that have to be understood and managed. An essential part of managing them is the use of a meaningful set of key performance indicators (KPIs). Indicators are not just seen as driving a set of traffic lights but providing essential insights into recent, current and future performance.

In this case study we will explore how the [Together Housing Group](#) (THG) are using and further developing a series of dashboards to understand their performance more effectively, in particular financial and operational and so address the most pressing issues.

In order to exploit industry best practice in analytics and dashboards, THG have worked with [Musgrave Analytics](#) to help them develop their performance framework. They have utilised the [Antivia](#) DecisionPoint™ software suite to build the dashboards which are based on data stored in the Aeron QL housing management system and the Open Accounts financial system alongside other systems including those for customer contact, repairs and asset management.

The Board Report

The performance dashboards are summarised in a simple overview designed to provide the Board with confidence in the overall direction of travel. A changing suite of just 5 summary KPIs are presented, as figure 1 shows. (Note: the numbers in the screen shot are illustrative and do not

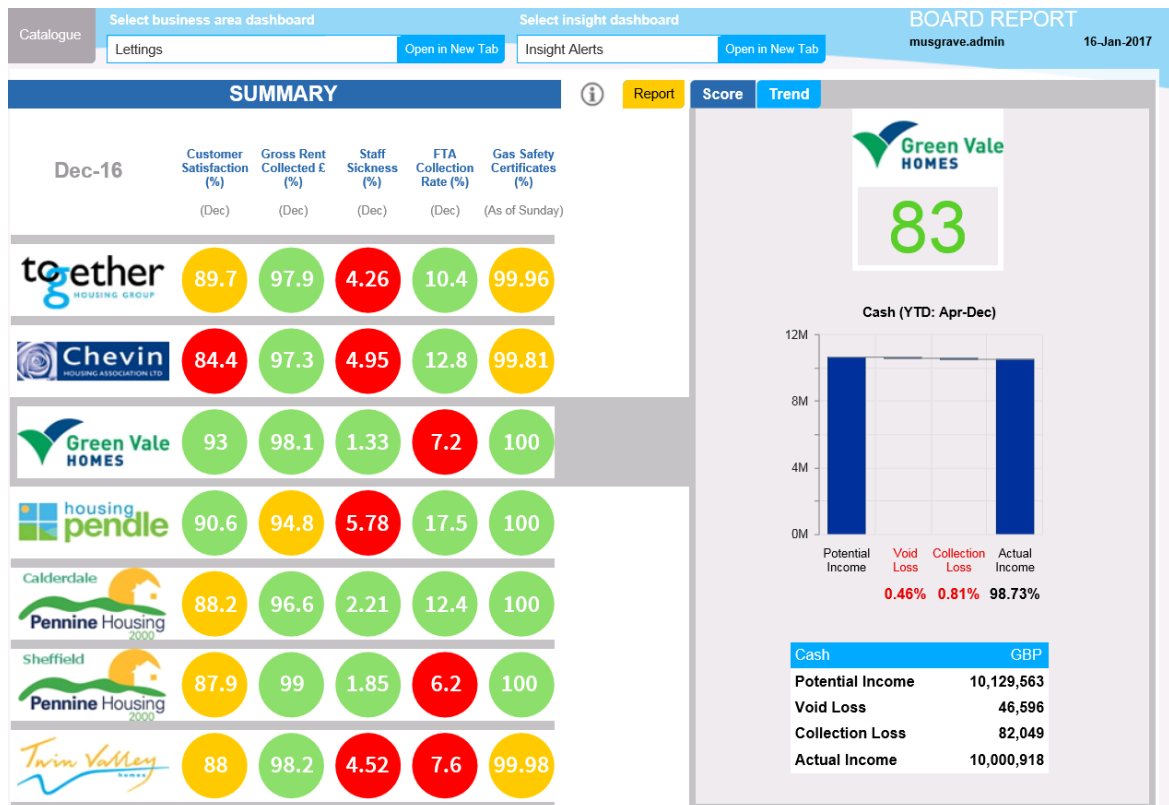


Figure 1- Summary screen (numbers for illustrative purposes only)

represent actual THG performance). The KPIs cover the four classic areas of interest for any organisation (namely Financial Performance, Customer Satisfaction, Internal Process Quality and Staffing). The waterfall chart reflects the overall financial capability. Potential total income is based on all properties being let and all tenants paying their rent and the graph quickly shows the main areas of financial vulnerability by the six major regions in which THG operates.

The right hand side can be easily switched to a trend view of the core KPIs (see figure 2), comparing current values against target, previous year or benchmarks. This view is important as it provides a context for each KPI, regardless of the current traffic light score (which is related to target). The trend view can help to answer questions such as –

- Are the KPI values increasing or decreasing?
- How do they compare to last year, target or to external benchmarks?
- How do we know if our performance is good, average or poor?
- Even if it is good, is it as good as it could be?
- Can we identify important changes in performance?

A key feature of this dashboard is that it allows the business intelligence (BI) team to add explanatory commentary. By running a live, automatically updated dashboard, the BI team can focus more on adding explanation, insights and recommendations rather than manipulating and computing the KPIs.

Economists talk of the principle of opportunity cost. If time is spent on one activity, then the cost is the lost opportunity to use that time on something else. So the Board report is designed to have enough, but not too much, information in order to focus the Board's attention on key topics, and not waste their time on issues that are not of concern, such as a KPI that is showing red but is likely to come into line by year end.

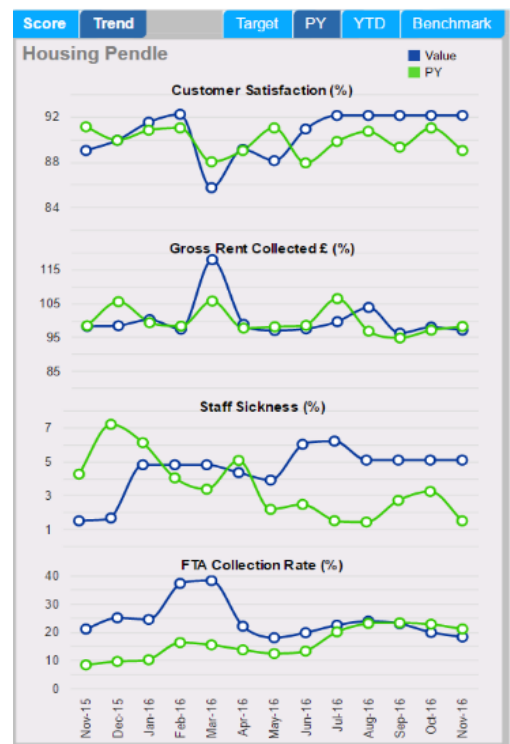


Figure 2- Summary KPI trends

The Management Reports

There are additional important questions that need to be addressed by other parts of the organisation's management and the next sections will explore these, enabling a wider set of questions to be answered, such as

- How are the core business areas functioning?
- Are there levels of the organisation where performance is a concern?
- What are the main outliers (exceptions) in performance?
- Have there been any significant changes in performance?
- How do KPIs combine to provide housing area overviews?
- Can we forecast future levels of KPIs?
- What are the consequences of changes in performance?

Business Areas

Most housing associations have a similar set of core activities, and THG is probably typical of the larger RPs. These are lettings, income management (rent collection and arrears), customer contact and repairs. There are other fundamental functions, such as asset management, finance, HR and property development. All of these should be supported by good KPIs and helpful insight.

Each of the core business areas is supported by a summary of the core KPIs presented, initially, in one overview as shown in figure 3.

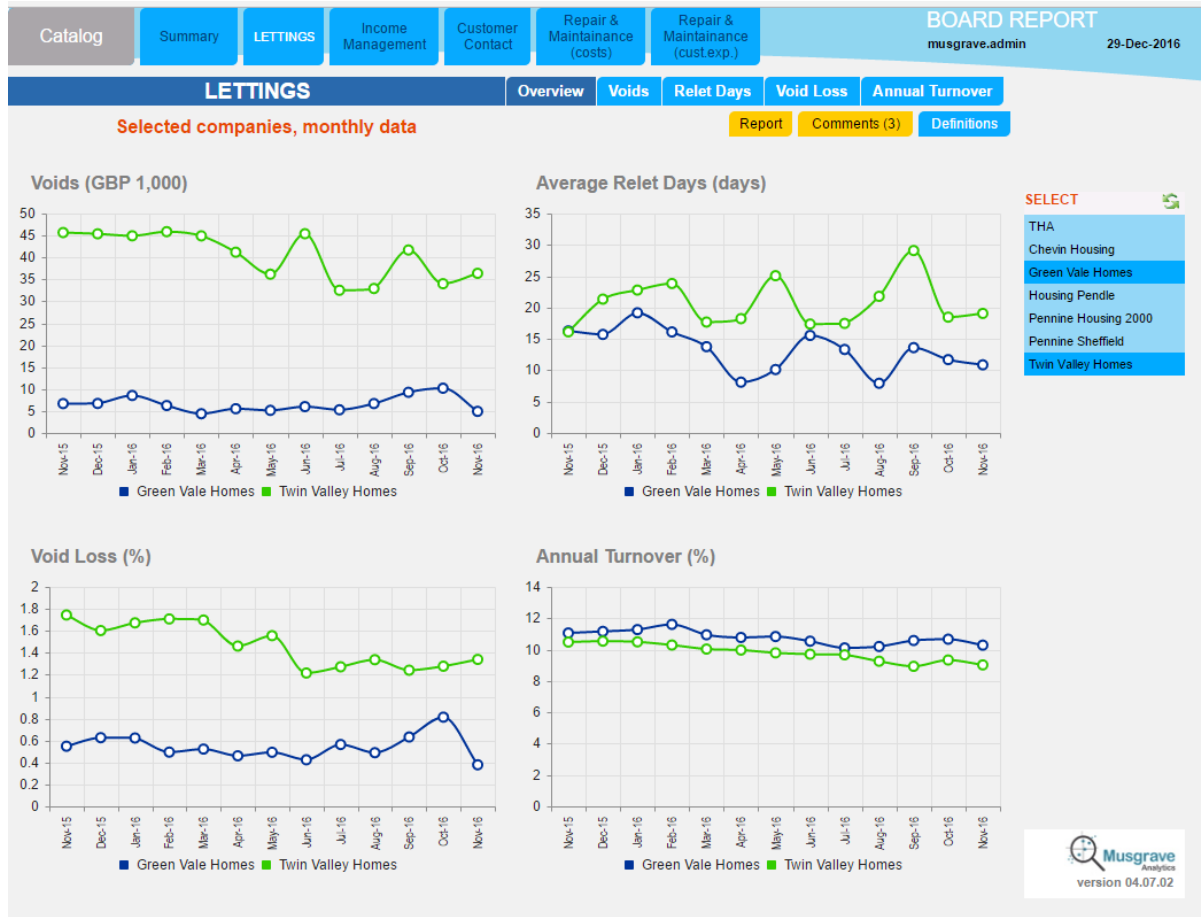


Figure 3- Comparing letting performance

The idea of showing four KPIs at once is to illustrate the relationship between the KPIs. In this example, the two left hand charts show the financial system and operational system view of voids. In order to obtain the ‘one version of the truth’ (a key aim of all the THG reporting) it is helpful to show the evidence on the same topics from two parts of the business. If they tell a similar story it builds confidence in the evidence, even though, due to timing and definition issues, they may never be exactly the same.

Drilling Down

From each business area summary screen, further understanding can be gathered on year to date performance, benchmarks, targets etc. by looking at one KPI at a time, as shown in figure 4.

The information can be shown at any level of the organisation by drilling down the management hierarchy, via area offices and to individual housing or income officers. As a result, individual performance issues can be understood and addressed where they need to be.

Screens present data at monthly reporting periods, ideal for operational managers, and are also available at weekly intervals to show near real-time performance, thereby enabling housing officers to be fully conscious of issues in their area of responsibility.

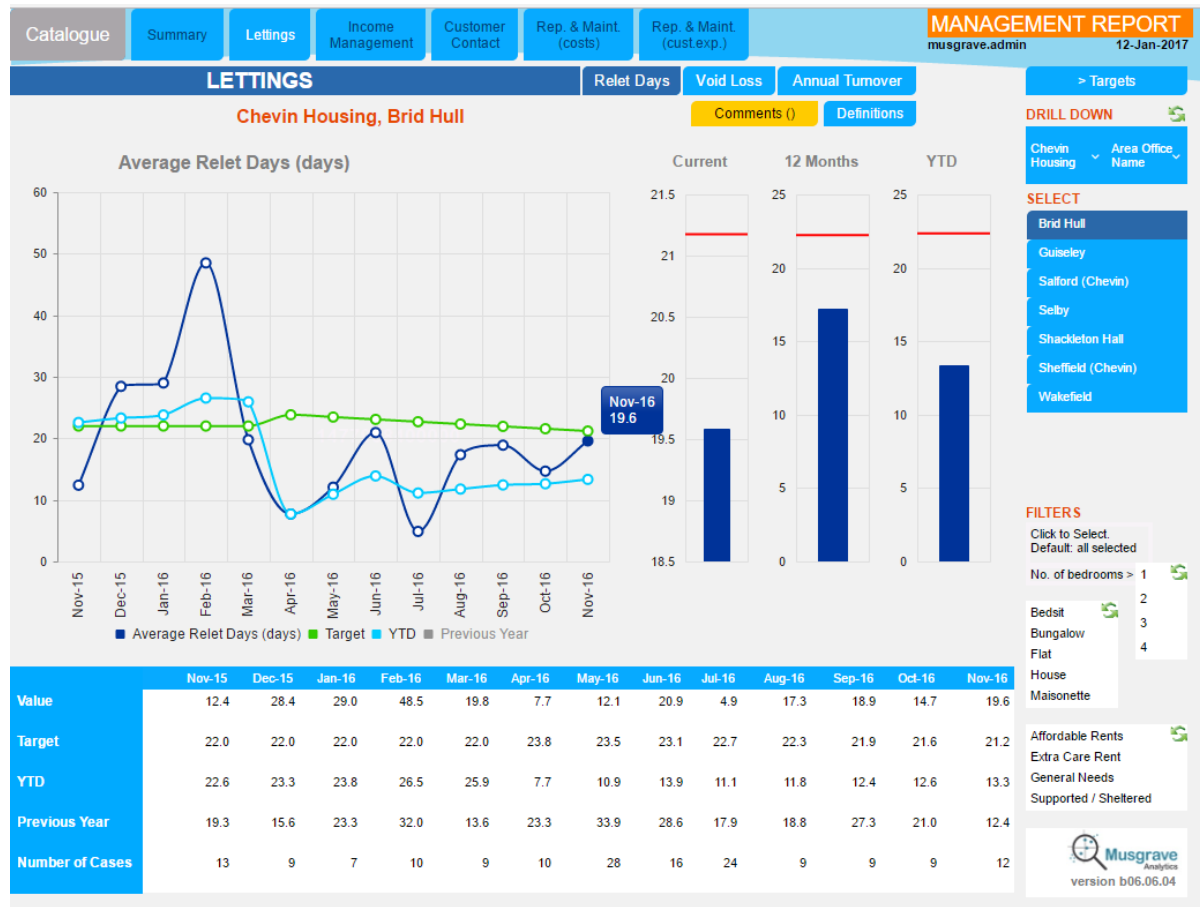


Figure 4- Drilling down to lower levels of the organisation

Understanding Assets

The main operational reports provide intelligence on the core KPIs, but, from the perspective of the asset manager, it is important to put the KPI performance in the context of overall housing area management. Hence a more complex screen has been designed to pull together a mix of significant information ranging from average property NPV values through to a core management performance data. This is shown in figure 5.

It illuminates overall performance, by way of a doughnut of traffic lights, a histogram showing performance on the selected KPI compared to other housing areas and a trend chart, with the usual comparators, to show performance over time. This dense operational screen is designed to consolidate all the important information for asset managers and so empower them to make key strategic decisions and investments on the basis of a solid understanding of both asset values, projected costs and management performance.



Figure 5- Housing area insight

Alerts

All the dashboards described so far are designed to be found by browsing or searching. However, the benefit of having well-structured and managed data is that it becomes possible to use analytical tools to draw managers' attention to key issues. There are two main types of data alert that can be developed:

- Value alerts – where the value of a KPI is seen as an outlier and should be noted and investigated
- Change alerts - where the typical behaviour of a KPI has changed and should also be noted and investigated.

THG have invested in these two types of alerts with screens that show the alerts ranked by value and allowing the user to switch directly to the housing area insight screen (figure 5) to view the outlier performance in context.

This kind of feature is a classic 'big data' attribute, in which the data is mined to provide insight that might otherwise have been missed, and so facilitate earlier corrective action.

Forecasts

As well as reviewing current and recent performance, executives and boards want to know what is likely to happen. Analytics cannot predict all the external shocks to a system, but they can do a good job on anticipating future performance based on previous patterns of behaviour.

Using advanced analytics, THG are able to separate the three main components of the KPI performance, namely long term trend, seasonal variation and the random element. The smaller the random element the more accurate the forecast.

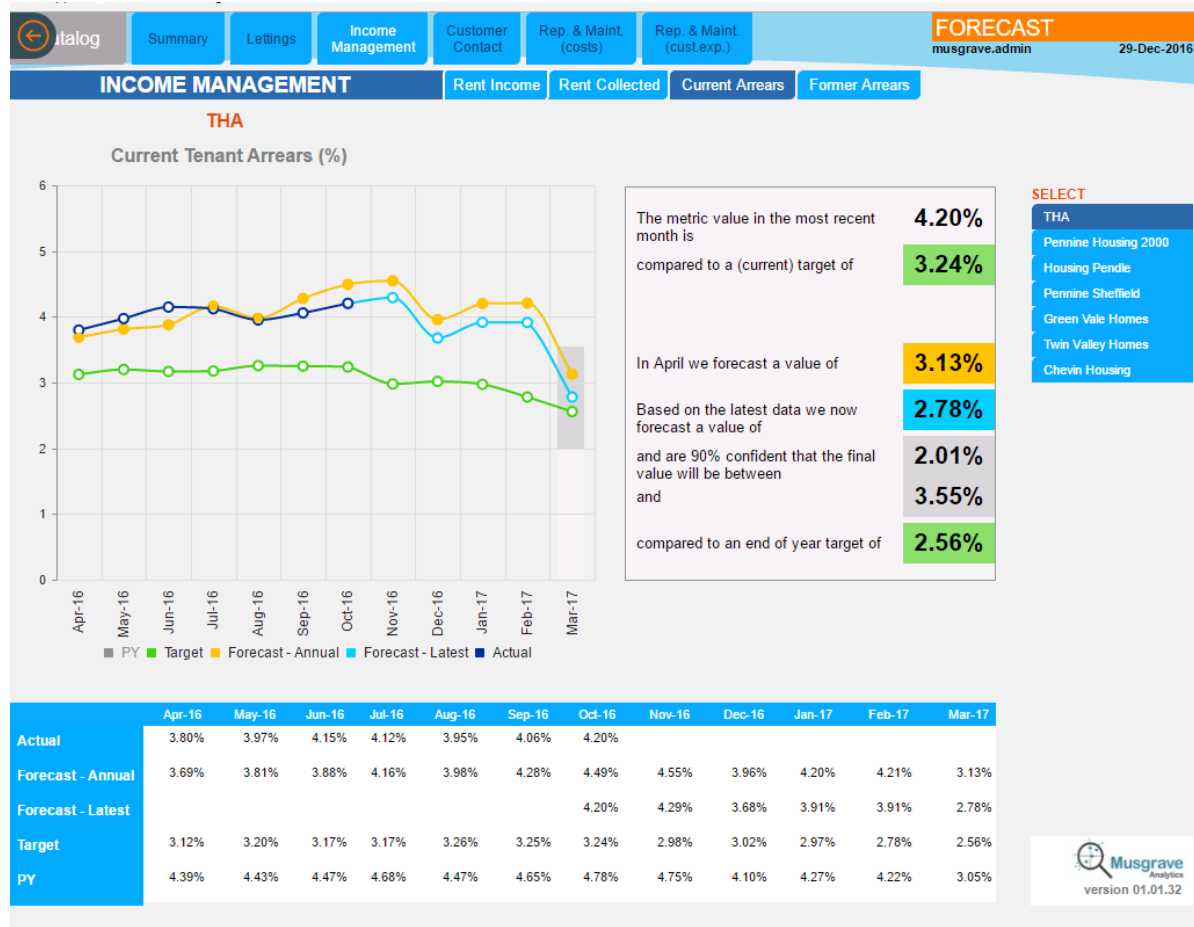


Figure 6 - Forecasting current tenant arrears

Figure 6 shows how the value for current tenant arrears is displayed for the Board. Note this is not based on the likelihood that a particular tenant will be in arrears, which can be done via credit scoring methods, but rather takes an aggregate performance view. As a result, the Board have a solid understanding of the likely value of arrears and can decide whether or not to take remedial action. By providing as good a forecast as possible, it reduces the risk of inappropriate remedial action by responding to poor KPI scores which are, in fact, likely to come into line with targets by the end of the financial year.

Other forecasts are being developed to help housing and income officers and their managers know whether their core performance is likely to be satisfactory at the end of each reporting period.

Conclusions

Any well run organisation has to ensure that the main KPIs are readily accessible and easy to understand in order to improve performance and minimise risk. It is hoped that this case study will stimulate debate not so much on the best KPIs to use but rather the best way to combine leading edge analytical capability with innovative dashboard design in order to improve the ability of Boards and management to minimise risk by running their organisations efficiently and cost-effectively.