Industry Perspectives: Case Studies in Performance Measurement

Construction Key Performance Indicators Launch 2012
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Presentation Agenda

Case Study 1. Contractor Performance Measurement Examples
• KPIZone
• KPI Engine
• Bespoke Systems

Case Study 2. Contractor Benchmarking Club Example
• Health and Safety Benchmarking

Case Study 3. Client Benchmarking Examples
• National Frameworks
• Regional Frameworks
• Housing Programme
Case Study 1: Contractor Performance Measurement
## The KPI Zone

### Key Performance Indicator (KPI) Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>KPIs</th>
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<td><strong>Headline KPIs (All Construction)</strong></td>
<td>Respect for People (Social)</td>
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<td><strong>Sector KPIs (Non-Housing Economic)</strong></td>
<td>Infrastructure</td>
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<td><strong>Sector KPIs (Housing Economic)</strong></td>
<td>Repairs Housing</td>
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<td><strong>Specialist KPIs</strong></td>
<td>M &amp; E Contractors</td>
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Choose the KPI Group by clicking on the relevant sector picture. This will take you to the KPI records for that group.

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**Image:**
- The image shows the homepage of The KPI Zone, which is a website dedicated to performance indicators in the construction industry. It features a menu with options like Home, About, KPI Engine, KPI Zone, Carbon, Login, KPIs, SPIs, Indicator Search, and Legacy Data.

**Text:**
- The page displays a table with different categories of KPIs, including Headline KPIs (All Construction), Sector KPIs (Non-Housing Economic), Sector KPIs (Housing Economic), and Specialist KPIs. Each category is further divided into specific KPIs such as Respect for People (Social), Economic, Environment, Infrastructure, New Build Non-Housing, R & M & Refurb Non-Housing, Repairs Housing, New Build Housing, R & M & Refurb Housing, Voids Housing, M & E Contractors, Consultants, and Construction Products.
Consistent KPI Definitions

National Dataset

Benchmark Score

Health & Safety - All Companies

Description
Reportable accidents per 100,000 employed by the company per year – the Accident Incidence Rate (AIR).

Reportable accidents are defined by HSE as fatalities, major injuries, and over 3 day accidents to employees, self-employed & members of the public.

Purpose
To measure a company's safety performance. (For use by companies of any size).

Calculation
\[
\text{Number of reportable accidents in the year} / \left( \frac{\text{Average number employed in the year}}{100,000} \right)
\]

Method Of Measurement
1. For use by companies of any size.
2. Calculate the Safety performance using the formula:

\[
\text{Performance (AIR) safety} = \left( \frac{\text{Number of reportable accidents in the year}}{\text{Average number employed in the year including self-employed and sub-contractors}} \right) \times 100,000
\]
The KPI Engine

- Submit and store project and company data
- Calculate KPI scores against the suite of standard industry or bespoke KPIs
- Report company or project level performance over time
- Benchmark performance across projects and against industry dataset
- Use the repository of data accumulated to monitor and drive continuous improvement
• consistent KPIs
• benchmarking
• drive continuous improvement
Performance Report

Project X against National 2011

KPI Engine Reporting

[Graph showing performance indicators like CPC, HPTCEC, DEF, CSS, and CSP with respective percentages: 95%, 78%, 62%, 85%, and 83%]
KPI Engine Reporting

Performance Report
Projects Comparison against National 2011

- Client Satisfaction - Product (CSP)
- Client Satisfaction - Service (CSS)
- Defects (DEF)
- Predictability Cost - Construction (CPC)
- Predictability Time Excl Client Changes Const (HPTCECC)
- Variance Time - Construction (VTC)

Bar chart showing comparison for BSE Library, Rose Hill, and Bramford.
Bespoke Internal KPI PMS

Internal Performance Management System using bespoke KPIs to benchmark regional offices and business units

- Forecasted Profit %
- Forecasted Profit £s
- Cash Collection
- Team Cost
- Completions on Time
- Tender Success Rate
- Client Satisfaction Overall
- Considerate Constructors Scheme
- Health and Safety Non-Reportable Accidents
- Health and Safety Score
Case Study 2: Health & Safety Benchmarking
The UK Contractors Group is the primary association for contractors in the UK. Mission to promote the industry and to support its members in delivering excellence.

- Balfour Beatty
- BAM Construct UK
- Bouygues
- Carillion plc
- Clegg Group
- Clugston Construction Ltd
- Costain Group plc
- D+R Scaffold Group
- Galliford Try plc
- Harsco Infrastructure
- Interserve plc
- ISG
- Keepmoat plc
- Kier Group
- Leadbitter
- Lend Lease
- Mace
- Midas Group Ltd
- Miller Group Ltd
- Morgan Sindall plc
- M + W Group
- Osborne
- Seddon Group Ltd
- Severfield-Rowen Plc
- Shepherd Construction Ltd
- John Sisk & Son Ltd
- Sir Robert McAlpine Ltd
- Skanska UK plc
- VINCI PLC
- Volker Wessels UK
- Wates Group Ltd
- Willmott Dixon Holdings Ltd
UKCG member companies require that everybody engaged on their construction sites is able to demonstrate they have the necessary health and safety knowledge and skills.

The aim of the UKCG Qualifying the Workforce Survey census (4th Oct 2012) is to calculate the percentage of those working on UKCG sites carrying correct competence cards and with appropriate training.

The key benefits are:
• Helping members understand the competence card compliance of their workforces.
• Helping members understand the health and safety training of their workforces.
• Provide feedback to members on the current competence card compliance “picture” across their sites, and how they compare to other firms.
## Data Collection Spreadsheet

- **Name**
- **Card ID**
- **Employment Type** (Direct, Labour Only, Sub-contract)
- **Seniority** (Director, Manager, Supervisor, Operative, Trainee/Apprentice)
- **Site Job Role** (30 Major Categories)
- **H&S Training**
- **Main Card Type** (Brand), **Main Card Occupation** (1200), **Main Card Category** (Colour)
- **Appropriate Training**, **Appropriate Card**, **Appropriate Category**

### Columns

| Column A: First Name (1) | Enter the First Name of the individual |
| Column B: Surname (2) | Enter the Surname of the individual |
| Column C: Main Card No (3) | This is the number displayed on the card, usually called registration number e.g. for CSCS it is an 8 digit number displayed on the front and back of the card. |
| Column D: Employment (4) | Use the drop down box to select the employment type: - Direct - Labour Only - Sub-contractor |
| Column E: Seniority (5) | Use the drop down box to select the seniority: - Director - Manager - Supervisor - Operative - Trainee/Apprentice |
H&S Reporting

QWF Submission Report

% Appropriate HS Training for Consultant, designer, planners, H&S advisers etc.;Direct;Manager;

Company 1: 20%
My Company: 40%
Company 2: 60%
Company 3: 80%
Company 4: 100%
Company 5: 70%
Average: 70%
H&S AIR Benchmarking

- Number of fatal Injuries
- Number of major accidents
- Number of >3 day accidents
- Number of dangerous occurrences
- Number of reportable diseases
- Injuries to members of the public
- HSE Inspections undertaken
- Prohibition notices issued
- Improvement notices issued
- HSE Invited Visits
Case Study 3: Client Performance Measurement
Ministry of Justice KPIs

• Client Satisfaction - Product
• Client Satisfaction - Service (Main Contractor)
• Client Satisfaction - Value for Money
• Client Satisfaction - Quality of O & M Manual
• Client Satisfaction - Quality Plan
• Defects
• Safety AIR Project
• Waste – Construction Process
• Energy Use (Designed) – Product
• Area of Created/Retained Habitat
• Impact on Biodiversity – Process
• Mains Water Use – Process
• Impact on Environment – (Process & Product)
• Predictability Time (%)  
• Predictability Cost (%)  
• Safety (% achieving zero accident incident rate)  
• Defects at handover  
• Client Satisfaction Service  
• Client Satisfaction Products
Environment Agency KPIs

- Cost predictability (%)
- Time predictability (%)
- Reuse of materials (%)
- Waste to landfill (%)
- Accident Frequency Rate
- Pollution Incidents (Category 1, 2 / Category 3 & near misses)
- Houses Protected (OM2)
- BAP Habitat Creation (hectares)
- Efficiency Savings (£M / % of programme)
North West Construction Hub – Regional Framework KPIs

- Predictability Cost Excl Client Changes Construct
- Predictability Time Excl Client Changes Const
- Predictability Time Excl Client Changes Design
- Client Satisfaction - Product
- Client Satisfaction - Service
- Contractor Satisfaction
- Supply Chain Satisfaction
- Fair Payment - Main Contractor
- Local Labour
- Apprenticeship weeks per £100000 project value
- Waste Diverted from Landfill tonnes £100k
- Waste from site - Construction Process only
- Carbon per £100000 project turnover - site level
Social Housing Procurement Group

1. Defects
2. Resident Satisfaction Product
3. Resident Satisfaction Service
4. % of resident satisfaction surveys returned
5. Formal complaints received
6. Variance Construction Cost
7. Variance Construction Time (weeks)
8. Variance install period per property (days)
9. Total variations
10. Properties changes from the original list
11. Non accesses
12. % of deliveries received in full
13. % of damaged products
14. Project Health and Safety
15. Environmental – Percentage waste to landfill
Example of Performance Measurement
Use:
P21+ Framework
Year on Year Performance Figures

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http://www.procure21plus.nhs.uk/performance/
Performance Measurement systems are easy to design – data can be hard to collect

Don’t be too ambitious in the beginning – start off small and then build up

Performance measurement is wasteful – only action gives value to PM – if data is not acted on is it the right data?

IT can help us manage data – but the experience and knowledge of people is still required