ROWAN

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OVERVIEW & BACKGROUND TO THE LEAN INITIATIVE

The Lean project was delivered at the Rowan office in Trim Co. Meath. Rowan operate in a very dynamic and competitive environment. The initial focus of the Lean deployment was to apply Lean thinking to a number of the administrative processes within Rowan. The objective of Lean in the Admin Office was to "streamline and eliminate waste from administrative processes and add value". The admin team take information, process it, and convert it into another form of information. Strategic goals had been agreed by the senior team and Lean thinking was applied to ensure the measurement processes linked to those high-level goals were delivered in the most effective and efficient manner. The aim was to deliver more value to the customer with reduced effort and resources. Rowan operated a document management system but the metrics around the business were administered outside the system and thus presented some opportunities for improvement. The initial introductory work was done with the Managing Director based on the fact that Lean begins with a committed leadership team with the leaders providing the foundation upon which all Lean initiatives are built.

LEAN INITIATIVE UNDERTAKEN – LEAN THINKING, TOOLS, TECHNIQUES

Two Lean projects were undertaken: the first project was to develop a new scheduling process for engineer site visits; and the second project was to develop a Lean metrics reporting system.

Appointment Scheduling

A key part of Rowan's work is site visits to carry out surveys to support engineering reports. Visits are scheduled on a pull basis and there needs to be a certain level of demand in a geographical location to generate a scheduled visit.

Lean Metrics

Lean Metrics are a standard set of measures that monitor the performance of processes through visual management techniques and which engages employees in the process. A standard set of measures helps the team

COMPANY OVERVIEW

Rowan was founded in 1998 by Tom Rowan and now employs 14 people. It is a respected multi-disciplinary company that specialises in forensic and environmental engineering, and provides a wide range of expertise to clients throughout Ireland, UK, Europe, and Africa.

Forensic engineering involves investigating an accident, furnishing a professional opinion on liability and providing expert reports and evidence in court. Rowan works with a range of leading insurance companies, solicitors, and industrial clients.

The environmental team offer a comprehensive range of environmental consultancy services to enable clients meet their statutory environmental obligations and remain competitive, including, for example, Environmental Impact Assessment Reports. Rowan clients include local authorities and leading industrial companies.

The successful growth of the business allows Rowan to provide solutions to its clients whilst also providing employment and contributing to the local economy.

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to reach the targets and goals, boosts output and service quality, and allows the management team to easily manage processes at a glance. The first Lean initiative focused on the monthly management reports generated by the admin team. Performance metrics are critical to Rowan's business as they help to identify issues as well as direct and drive performance improvements. It is critical that all metrics are clear to the intended audience and can be generated as efficiently as possible. The two most critical management reports were the monthly WIP (work in progress) reports and the monthly work completed reports (work analysis report).

Process Mapping

The initial approach involved developing a map of the current state processes. The purpose of process mapping is to identify areas of opportunity for efficiency improvement. Process mapping provides insight into the process and helps generate ideas for process improvement.

All steps, decision points, and processes were looked at and documented. The current state map outlined the process as it currently worked, who was responsible for each step, and how long it took to complete each task. The future state map was then developed to represent the ideal process.

Meetings were held with the supplier of the document management system, and a number of reporting modifications were specified and implemented which formed part of the automation solution for the scheduling and metrics.

8 Wastes

The current state was evaluated versus the 8 Wastes of Lean. Motion, Over-Processing, and Skills were the wastes with the greatest improvement potential for metrics reporting and for scheduling:

- **Motion:** To collect the required data, the admin team had to interrogate the document management system case-by-case, which involved a lot of movement into and out of the document management system each time.
- **Over-Processing:** The data for reports existed in multiple parallel systems and resulted in duplication of cross-checking activities.
- **Skills:** The admin team was spending a lot of the process time on manual data transposing, and not a lot of time on actual data analysis which is its value-add

Visual Management

Current state reports were presented in table format and reports were not dynamic and report views were fixed. It was decided to create dynamic dashboards which have a number of benefits, including providing real-time information, creating one version of the truth, being easier to change, allowing drill-downs, and providing a consistent view. With regard to scheduling, visibility on unscheduled cases was not available to the team.

Standard Work

Standard work documents are the best practice for performing a task or process. There are many benefits to standard work in the office, and making sure work is done according to current best practice is a pre-requisite for improvement. Implementing standard work with the admin team had many benefits, including:

- Simplifying training and upskilling.
- Improving quality and reducing defects and waste.
- Helping make results predictable and measurable.
- Shifting the focus to the process – not the person.
- Enabling faster and easier improvement.
- Encouraging engagement and ownership by team members.
- Reducing workplace stress.
- Encouraging flexibility and creativity.

Lean Office

The planned automation of the metrics and scheduling helped the admin team gain an understanding of demand patterns in the office. Understanding all of the various tasks is important to running a Lean office. The intention was to create a Lean office with automation, standard work, and visual management to support the team. A Lean office is visual and management, teamwork, and communication are all easier when anyone can walk into the work area and immediately see what is going on. Because so much admin work was hidden on computer systems, it almost became impossible to see what was happening and whether changes were necessary. The visual office made abnormal situations obvious. A Lean office runs on communication and teamwork. Because of the dynamic nature of a Lean office, team members need to be responsive and flexible when changes in demand occur. The aim was to develop a continuous improvement culture where reducing waste and making improvements becomes a part of day to day activities.

LEAN INITIATIVE IMPROVEMENTS & IMPACT

Scheduling Solution

Following the process map on the scheduling project, it was decided to change the workflow and introduce standard work to the scheduling process. A new scheduling system was developed and implemented to track what cases were scheduled and which engineer they were assigned to, and the system also provided visibility on scheduled and unscheduled work by geographical location. All new cases were assigned a case number on the main document control system. New cases were exported to the new scheduling system daily, and the default position for new cases was unscheduled. A location field for each case was exported with the cases numbers which provided the data required for the admin team to schedule on a geographical basis. The new scheduling system reduced the time required for scheduling by 25% per week. The main saving was in the optimisation of existing data and building a scheduling system around the existing system data.

Type Of Accident	(All)						
Sum of Cases	Column Labels						
Row Labels	Engineer 1	Engineer 2	Engineer 3	Engineer 4	Engineer 5	Engineer 7	Grand Total
Location 4	3	12		7	2		24
Location 11	1	4		1	2		8
Location 5			6			1	7
Location 13	2			1	3		6
Location 3	3		2				5
Location 17			2		3		5
Location 6					5		5
Location 10	3				1		4
Location 20	2				1		3
Location 21				2			2
Location 7		1	1				2
Location 23		1					1
Location 18					1		1
				1			1
Location 12			1				1
Location 2			1				1
Location 1	1						1
Location 14	1						1
Location 9			1				1
Grand Total	16	18	14	12	18	1	79

Figure 1.

Metrics Work in Progress

The standard report from the document management system was modified and a macro was written to convert data from the standard documentation system into a format ready for data analysis. A data analysis system was developed to produce WIP reports directly from the documentation management system data. All admin team members were trained on running the macro and updating the reporting system. All reports were converted to graphical format as well as the existing data table format. There was an ensuing 30% saving per month in time required to generate the monthly work in progress report.

2020 KPIs Dashboard: Actual v Target					
January					
		Target	Actual	Actual v target	Status
Metric 1	Current month Year to date Annual forecast (Act ytd + FC remainder of year)				
Metric 2	Current month Year to date Annual forecast (Act ytd + FC remainder of year)				
Metric 3	Current month Year to date Annual forecast (Act ytd + FC remainder of year)				
Metric 4	Current month Year to date Annual forecast (Act ytd + FC remainder of year)				
Metric 5	Current month Year to date Annual forecast (Act ytd + FC remainder of year)				
Metric 6	Current month Year to date				
Metric 8	Current month Year to date				
January Metric 1 target					

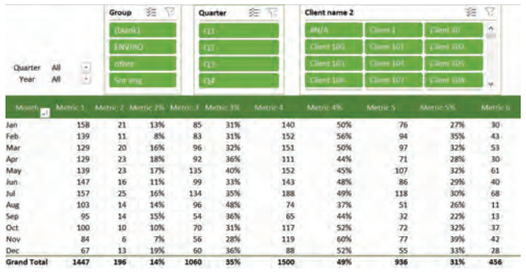
Figure 2.

Visual Management

The data from the metrics invoicing reporting system is now used to populate monthly management reports and a team dashboard which is displayed on monitors in the office area. These show performance month-to-date and year-to-date versus target for each of the key metrics. The information from both systems is also being used to support a new performance appraisal system. It is expected that the information provided by the metrics invoicing report will support job efficiency improvement. On scheduling, a visual management system was developed in Google Maps to show unscheduled cases by geographical location.

Metrics Invoicing Report

The existing system provided data on hours-per-invoiced-job. A new system was built to automate the analysis and provided automatic trend analysis with the ability to drill into performance by engineer, by customer, and so on. There was a 25% saving per month as a result of implementing the new Lean invoicing report. Custom reports that would have taken a day to prepare are now available as standard reports from the system. Added functionality from the new system included percentage attainment performance versus target across a range of business KPIs. The new invoicing report system provides operational efficiency, reporting down to customer, category and case level. This level of data analysis will support business strategy development over the coming years.



Month	Metric 1	Metric 2	Metric 2%	Metric 3	Metric 3%	Metric 4	Metric 4%	Metric 5	Metric 5%	Metric 6
Jan	158	21	13%	85	31%	140	50%	76	27%	30
Feb	139	11	8%	83	31%	152	56%	94	35%	43
Mar	129	20	16%	96	32%	151	50%	97	32%	53
Apr	129	23	18%	92	36%	111	44%	71	28%	30
May	139	23	17%	135	40%	152	45%	107	32%	61
Jun	147	16	11%	99	33%	143	48%	86	29%	40
Jul	157	25	16%	134	35%	188	49%	118	30%	68
Aug	103	14	14%	96	48%	74	37%	51	26%	11
Sep	95	14	15%	54	36%	65	44%	32	22%	13
Oct	100	10	10%	70	31%	117	52%	72	32%	37
Nov	84	6	7%	56	28%	119	60%	77	39%	42
Dec	67	13	19%	60	36%	88	52%	55	33%	28
Grand Total	**1447**	**196**	**14%**	**1060**	**35%**	**1500**	**49%**	**936**	**31%**	**456**

Figure 3

Standard Work

Through the use of new system reports, new macros, and a bespoke reporting solution, the admin work around scheduling and management report generation has been standardised and multiple team members are trained on this work. Since the system has been installed, there have been some further improvements as expected in an iterative Lean approach. The new systems are an excellent baseline for the next round of improvement activities. As the MD states:

"We're delighted with the efficiencies and improvements introduced as a result of the Lean programme. We strongly recommend the programme to any SMEs looking to improve their operations. We look forward to working on further Lean initiatives."

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