

### ***Prelude:***

Oxygen Insurance Managers (OIM) UK is a Managing General Agent (MGA) providing a range of insurance and risk management services. OIM is a fully owned subsidiary of Arthur.J.Gallagher the 4th largest insurance brokerage and risk management services firm in the world with annual revenues in excess of \$1 billion dollars. Managing General Agent is an insurance intermediary between the Insured, Coverholder, & the Insurer/Carrier. Coverholders act as agents for insurers, writing insurance contracts on their behalf and serving as their local representatives.

### ***Case Study:***

Oxygen Insurance Managers has about 100 Coverholders who write insurance contracts on their behalf. Oxygen Insurance Managers generates its revenue by charging a commission of about 3% of the Premium.

### ***Defining the Problem:***

The time and cost involved in servicing a Coverholder was high, it cost approximately £400 to service a Coverholder. The documentation involved was also lengthy and the verification of the documentation provided by the Coverholders was being done by Senior Underwriters, OIM Tech Specialists and Subject Matter Experts. These were high end resources and hence the cost involved was high. Besides the cost the time spent in vetting the documents was long

### ***Voice of the Customer:***

To arrive at an efficient platform for OIM and make it a profitable business. The objective in a nutshell was to increase the average revenue per transaction and reduce the average cost per transaction

### ***Measure Phase:***

The following tools were mainly used during the Measure phase to identify the causes of the problem i.e the high cost of servicing and the time taken to service the client.

- A. Process Mapping
- B. Cause and Effect Diagram
- C. Gage R&R

## Process Mapping:

The process flow in brief is as depicted below. The Coverholder books the business on behalf of the insurer, information regarding the business booked for a month is sent to the MGA at the beginning of the succeeding month. The Managing General Agent plays the role of an administrator and does the policy servicing. The MGA gets a commission based on the business booked by the Coverholder.

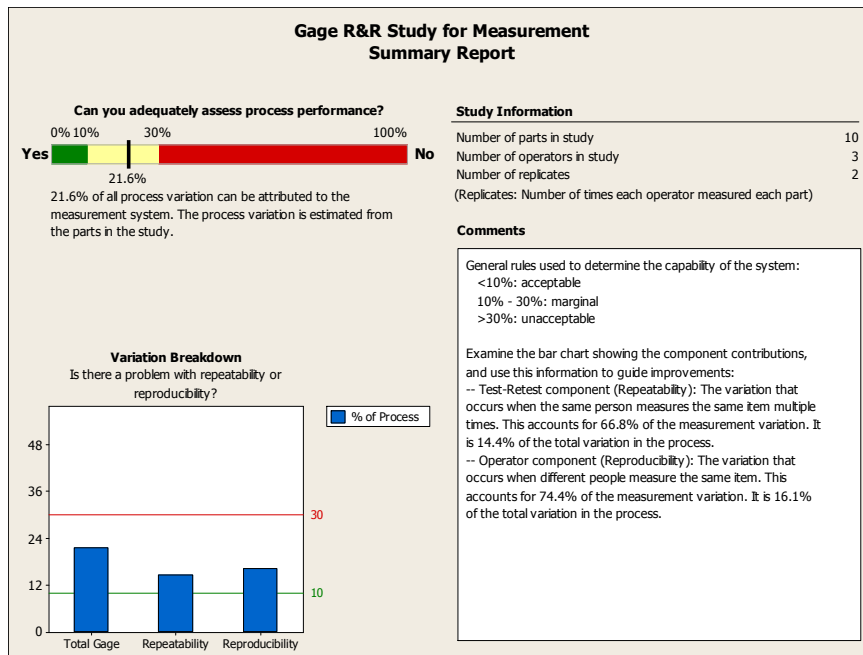


## Cause & Effect Diagram:

Brainstorming using the Ishikawa diagram was done. The outcome of the Brainstorming was identification of plausible Xs – Different formats used by Coverholders, Coverholders calculating commission incorrectly, Sending only details of Premium without details of the Risk involved, Incorrectly filling up the details, and incomplete details.

## Gage R&R:

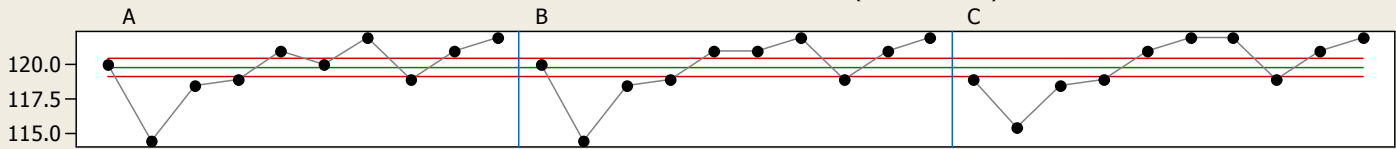
During the Measure phase the time taken to process the documentation was evaluated. The same transaction was measured by 3 people and 10 transactions were evaluated to ensure that the Measurement was accurate. The transactions were divided into 3 categories based on the Revenue generated <£1000, £1000 to £5000, & >£5000.



### Gage R&R Study for Measurement Variation Report

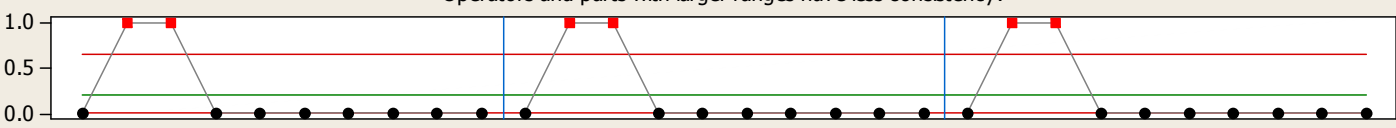
**Xbar Chart of Part Averages by Operator**

At least 50% should be outside the limits. (actual: 90.0%)



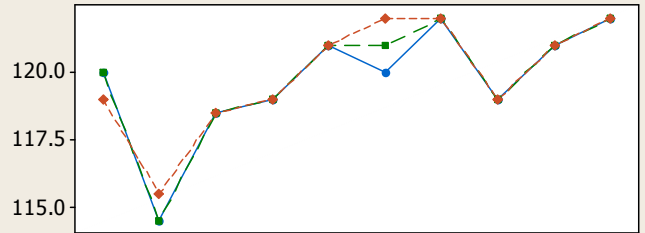
**R Chart of Test-Retest Ranges by Operator (Repeatability)**

Operators and parts with larger ranges have less consistency.



**Reproducibility — Operator by Part Interaction**

Look for abnormal points or patterns.

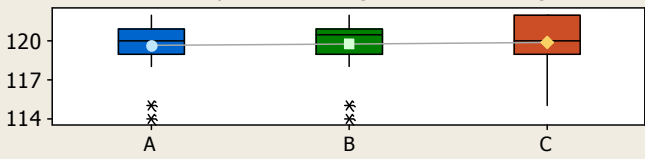


**Variation Breakdown**

Source	StDev	%Process (data)
Total Gage	0.473	21.62
Repeatability	0.316	14.44
Reproducibility	0.352	16.09
Part-to-Part	2.138	97.64
Process Var (data)	2.190	100.00

**Reproducibility — Operator Main Effects**

Look for operators with higher or lower averages.



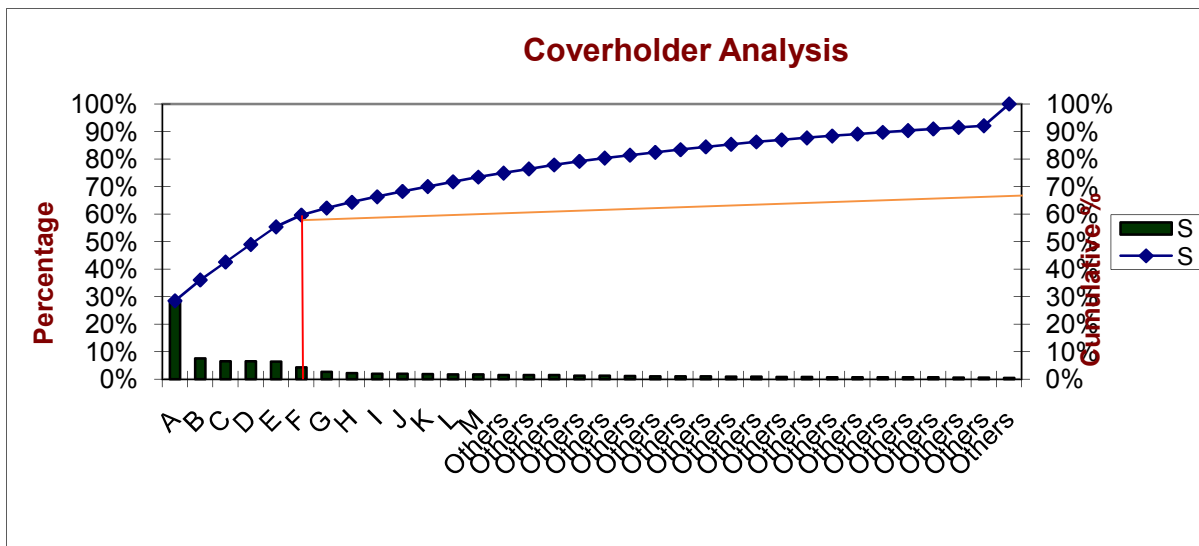
% Contribution		
Source	Varcomp	% of Variance Component
Total Gage R&R	0.22407	4.67
Repeatability	0.1	2.09
Reproducibility	0.12407	2.59
Operator	0	0
Operator *Part	0.12407	2.59
Part - To - Part	4.57037	95.33
Total Variation	4.79	100

The Gage R&R study revealed that the % Contribution was only 4.67%. The Thumb rule is that as long as the % Contribution is <9% it is acceptable ie the Measurement System variation is within acceptable limits..

**Analyze Phase:**

Advanced Statistical tools like Hypothesis tests and Regression were done to determine whether the time spent in vetting the documents was dependent on the revenue generated by the coverholder. Also Pareto charts were employed to identify the breakup of the Revenue generated by the Coverholders. The results of the Analysis are as follows

The Pareto Chart revealed that 6 Coverholders generated about 60% of the total revenue..



An analysis of the transaction time was done. ANOVA was used to find out if there was a significant difference in the time taken to vet the documentation of Coverholders based on the Revenue generated by them (<£1000, £1000 to £5000, & >£5000)

One Way ANOVA		<£1000	£1000 to £5000	>£5000		
Source	DF	SS	MS	F	P	
Factor	2	0.08	0.04	0.02	0.977	
Error	21	37.75	1.8			
Total	23	37.83				

The P value was 0.977. This showed that there was no difference in the transaction time based on the Revenue generated by the Coverholders.

Analysis further revealed that considering the costs involved servicing the bottom 10% of the Coverholders (in terms of revenue generation) was not viable. These were Coverholders whose average monthly revenue was less than £750.

**Improve:**

The Coverholders were classified into 3 categories – Tier1, Tier2, & Tier3. Tier3 comprised of Coverholders who generated a monthly revenue of >£5000, Tier 2 £1000 to £5000 and Tier 3 <£1000.

The Vetting of documents by OIM Underwriters & OIM Tech Specialists (Resources whose costs were high) would be done only for Tier1 Coverholders. A standardized format was provided for Coverholders belonging to Tier2 and Tier 3. The vetting of their documentation would be done by Claims Analysts. A portal was developed Coverholders would key in their details in the Portal. The claims analysts had access to this portal. The earlier practice was for the Coverholders to mail the details of the Premium and Risk to OIM. They used to send Excel sheets in different formats. However with the introduction of the portal the format was standardized across all Coverholders.

The above measures resulted in reducing the cost per transaction from £400 to £250 and the average time reduced from 119 minutes to 70 minutes.

	N	Mean	STD Dev	SEMean
Pre	24	119.92	1.28	0.262
Post	24	68.25	4.7	0.958
Difference	24	51.667	4.779	0.976

T-Test of mean difference = 0 (vs > 0): T-Value = 52.96 P-Value = 0.000

Ho = There is no difference in the time taken to scrutinize the documents

Ha = The time taken to scrutinize the documents has reduced.

The P value of 0.0 indicates that there has been a reduction in the transaction time.

**Control:**

The data was analyzed for 3 months post improvement. As the data was Normal an I-MR chart was used to see if the time was in Control.

