

On the Use and Mis-Use of Metrics in General Insurance

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What gets measured gets managed...

...even when it's pointless to measure and manage it, and even if it harms the purpose of the organisation to do so.

Ridgway, V.F, 1956, *Dysfunctional Consequences of Performance Measurements*

Metric Fixation

3 Primary Characteristics

1. Metrics heavily substituted for insight and judgement in evaluation and decision-making
2. Achievement of organizational goals is conflated with the reporting of metrics at nominated values
3. Conviction that improved performance is motivated by the use of metrics to reward and penalise

Some Consequences of Metric Fixation

Goal Displacement

- Creaming
- Tunnel Vision
- Short-termism

Degradation of data

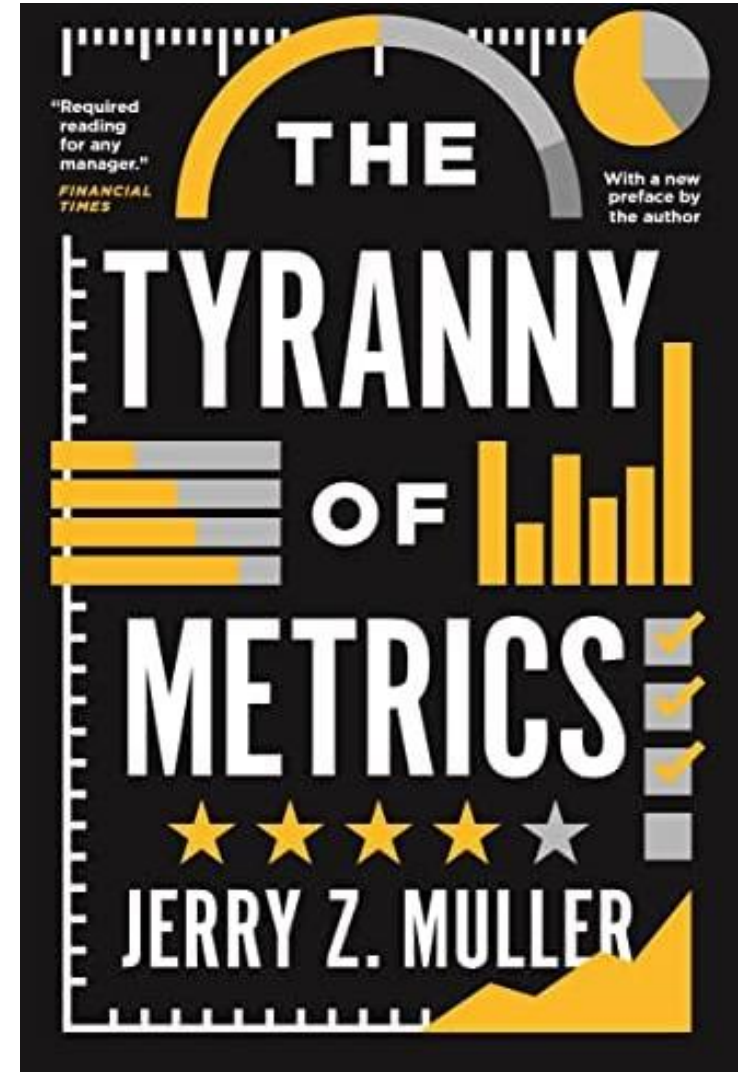
- Standardisation
- Selective Omission & Distortion

Manipulation

- Sandbagging
- Mis-representation by design

Opportunity Cost

- Excessive effort for low-value data gathering & reporting
- Organisational culture dominated by extrinsic motivations



Goodhart's Law

A deep and powerful
insight

*“When a measure becomes
a target, it ceases to be a
good measure.”*

As paraphrased by *Marilyn Strathern*

Poor Quality Metrics

Amplifier for
consequences of
Goodhart's Law

Business metrics frequently deployed:

- based on inappropriate / inadequate data models
- in the absence of suitable quality frameworks

Actuaries have an important role:

- combine domain knowledge & technical capabilities
- accustomed to decision making under uncertainty
- professional training / toolkits to maintain integrity
- often tasked with initial construction of metrics

For Actuaries

STRENGTHEN OUR BUSINESSES BY INFLUENCING THE DESIGN
AND DEPLOYMENT OF METRICS

Keep It Professional

The over-riding principle

1. Understand the audience
2. Stay in your lane
3. Understand the underlying data model
4. Implement a control cycle
5. Have the courage to say “no”

Caution - Remember to:

RESPECT YOUR DATA

It doesn't owe you anything, let alone an answer to the question you have.

Do you really understand the source data you are working with? (NEP, GWP...?)

Common Problem: Reliance on output from accounting systems to describe 'real world' concepts.

BUILD YOUR METRICS CAREFULLY

Avoid being pushed to quantify 'fuzzy' concepts

Look at the metric without its label:

- does it still mean anything?

You should be able to make informed statements about the completeness, bias and variance of your metric.

Don't forget the control cycle.

“But it’s the best
we’ve got...”

A pragmatic veneer, but its
something else entirely!



For Executives

IMPROVING YOUR CONFIDENCE THAT THE METRICS YOU RELY UPON
ARE RELIABLE GUIDES FOR BUSINESS EVALUATION AND DECISION
MAKING

Use Metrics Wisely

Don't under-estimate
what you will lose when a
metric becomes a target

1. Stay as close as you can to your business –
dashboards won't do this for you
2. Invest time in understanding the construction of
metrics that you rely upon heavily
3. Set explanatory standards for the metrics you use
4. Beware of ratios!

Set Standards You Can Accept

EXPLANATORY POWER OF METRICS

- i. Superb
- ii. Useful
- iii. Tentative
- iv. **I can construct a story around this metric that is capable of being true**

Be alert to signs of ‘cognitive dissonance’ when values are being explained to you.

DON'T ACCEPT METRICS AT FACE VALUE

Try to maintain independent benchmarks, especially qualitative.

Ask probing questions when you suspect that metrics are low quality.

Don't rely on labels - periodically test your own assumptions about what a metric “means”.

If exceptional readings are routinely explained by technical anomalies, have the metric reviewed or retire it altogether.

Thank you

Excerpts from the Zen of Python

Simple is better than complex.

Complex is better than complicated.

Special cases aren't special enough to break the rules.

Although practicality beats purity.

Errors should never pass silently.

In the face of ambiguity, refuse the temptation to guess.

Now is better than never.

Although never is often better than right now.

If the implementation is hard to explain, it's a bad idea.

If the implementation is easy to explain, it may be a good idea.

References and Source Material

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About the Presenter

Andrew has a broad educational background spanning music, literature, psychology and mathematics, and commenced his actuarial studies after a ten-year career in the public service.

He worked with Finity Consulting in Sydney, focussed on long-tail lines reserving and dynamic financial analysis, before accepting an offer to join the AXA Asia regional actuarial team in Singapore in 2011. He transitioned into a CFO role with AXA Corporate Solutions in 2014, gaining valuable experience with insurance operations, investments, capital management and strategy.

Andrew joined QBE Singapore as CFO in 2019, from where he continues to promote the value of leveraging actuarial skillsets in non-traditional roles and functions.