

Australasian Conference on Software Best Practices

Measurement for Management

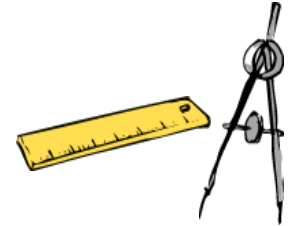
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ITMPI/ACOSM, 15th -16th November, 2007

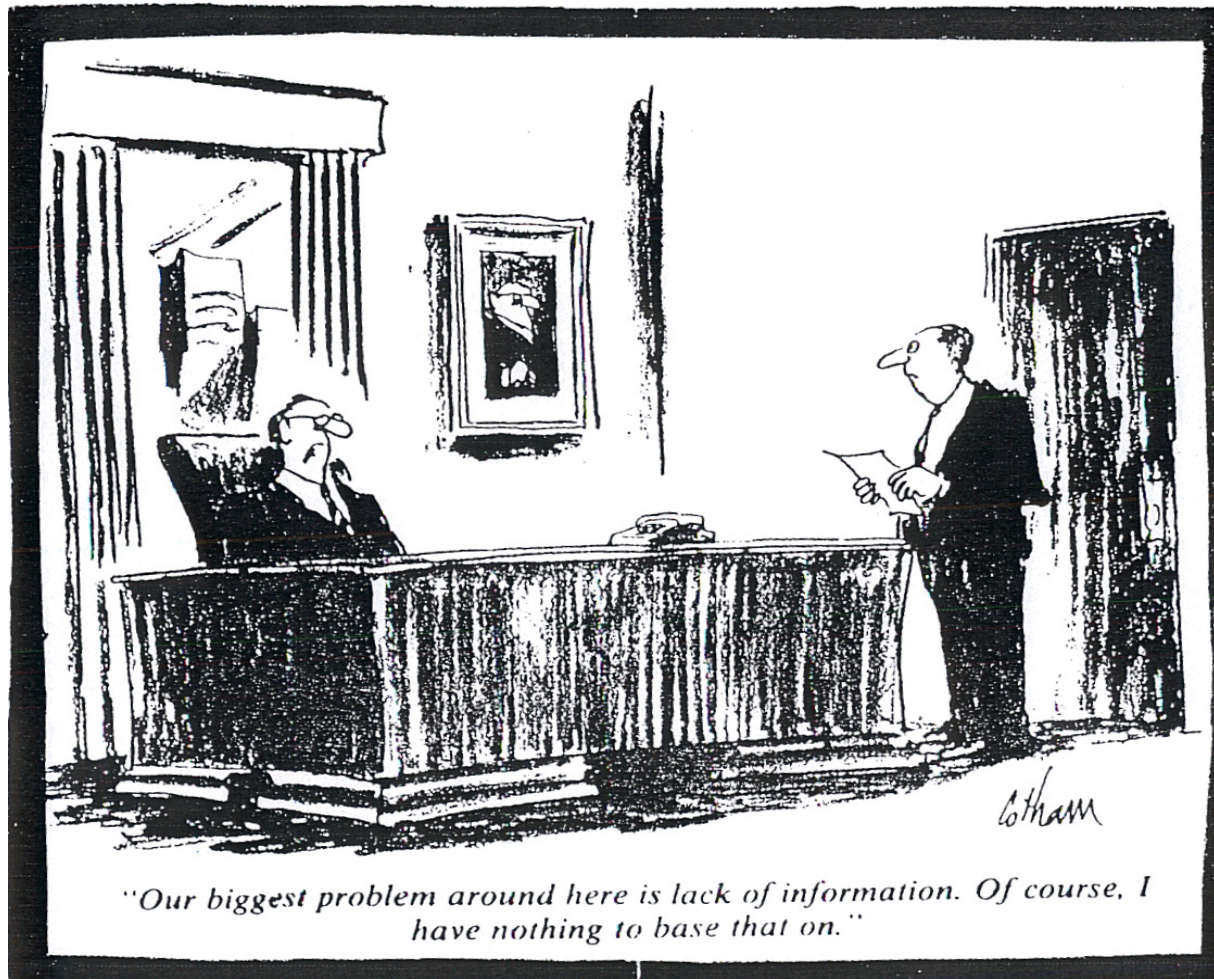
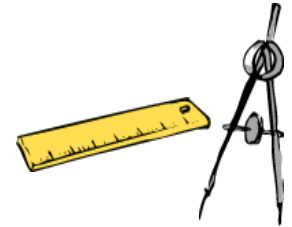
Measurement allows.....



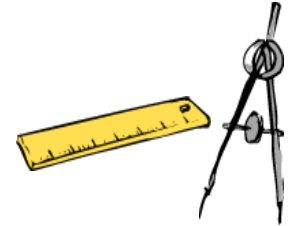
- Predictions and commitments
- Understanding capability
- Anticipation of trends and problems
- Controlling costs
- Reducing risk
- Improving quality
- Meeting business objectives

from *Practical Software Measurement: Measuring for Process Management and Improvement* Florac, Park & Carleton, CMU/SEI-07-HB-003

Measurement is good ...



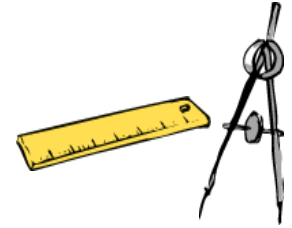
... there are alternative views ...



All you need in life is ignorance and confidence, and then success is sure.

Mark Twain, 1887

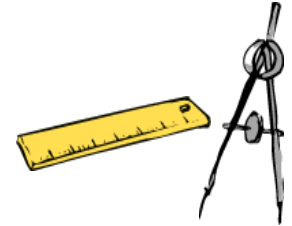
Measurement and business goals.....



*If you can't measure it,
you can't manage it*

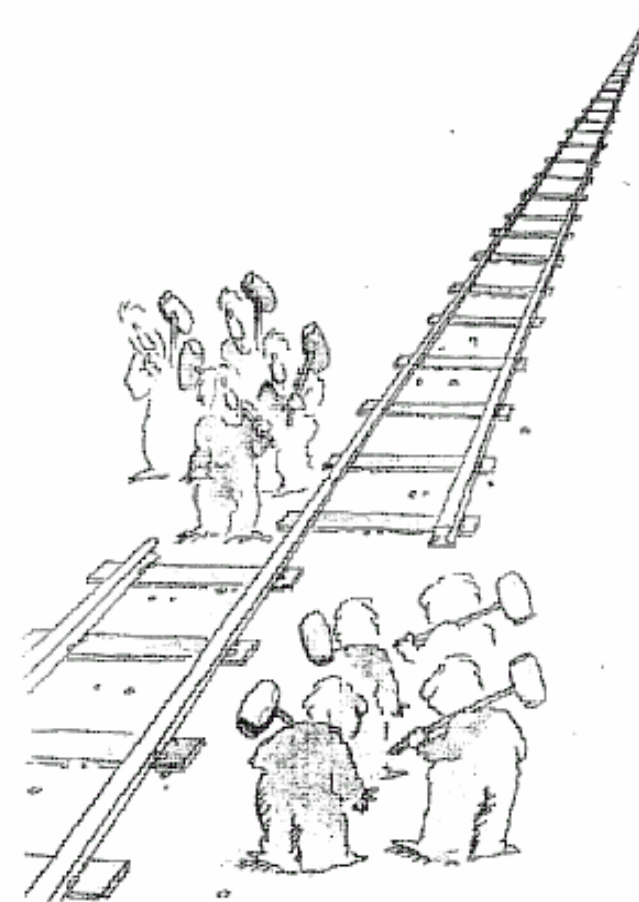
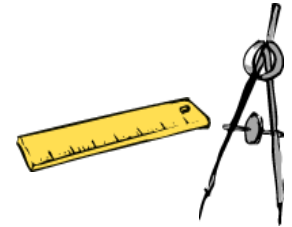
Peter Drucker

Why don't we measure more?

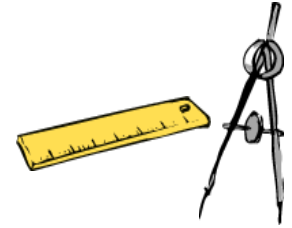


- **Measurement is an obvious and fundamental part of any managed activity.**
- **So, why do many applications software development organisations do so little of it?**
- **And why do many get little benefit from the measurements they do have?**

Why don't our measurements align?



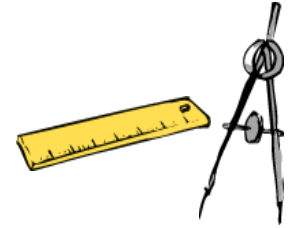
Alignment



**We may be measuring
*things right ...***

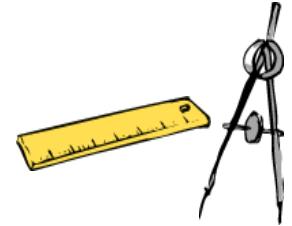
**... but are we measuring the
*right things?***

Some places where things go astray.....



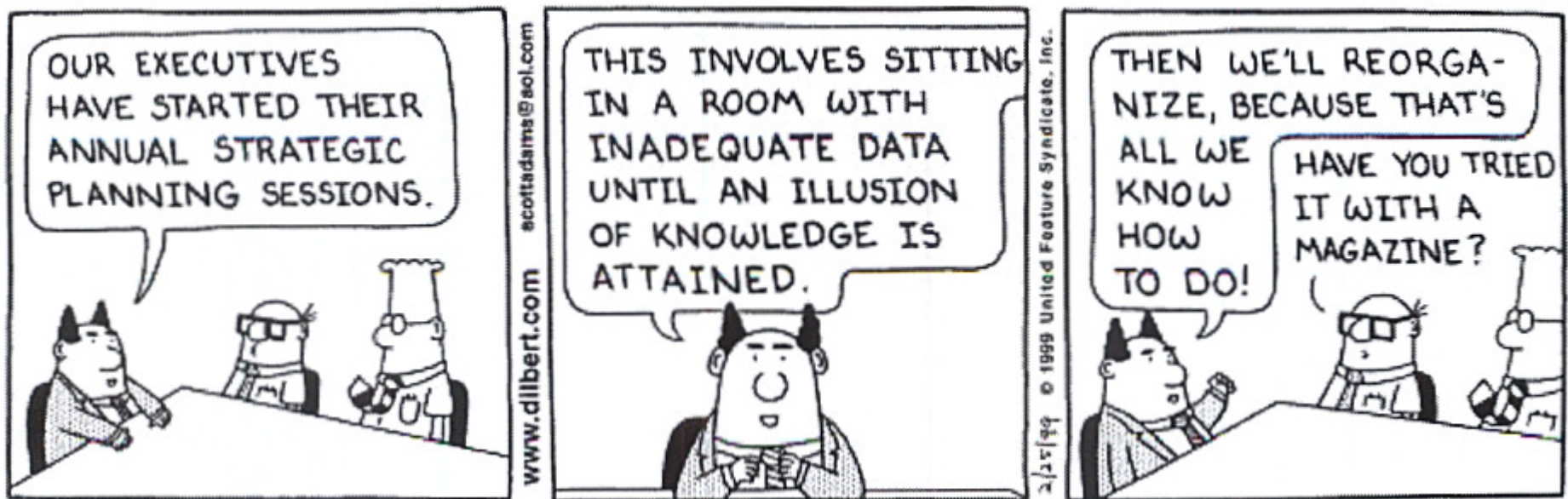
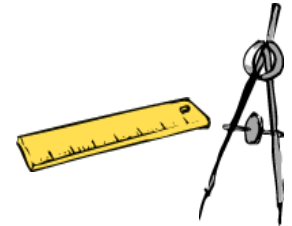
- **Organisational Maturity**
- **Measurement Goals**
- **Organisational Culture**

Organisational Maturity

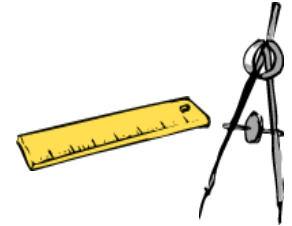


- There will usually be a mismatch between maturity levels of the *business* organisation and the *software development or services* organisation
- Organisational maturity levels at CMMI level 3 or better are now common in the software and services industry
- Equivalent maturity levels are most *uncommon* in general business organisations

Organisational maturity?



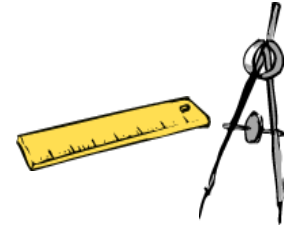
Organisational maturity



Organisational maturity *requires*
a measurement function ...

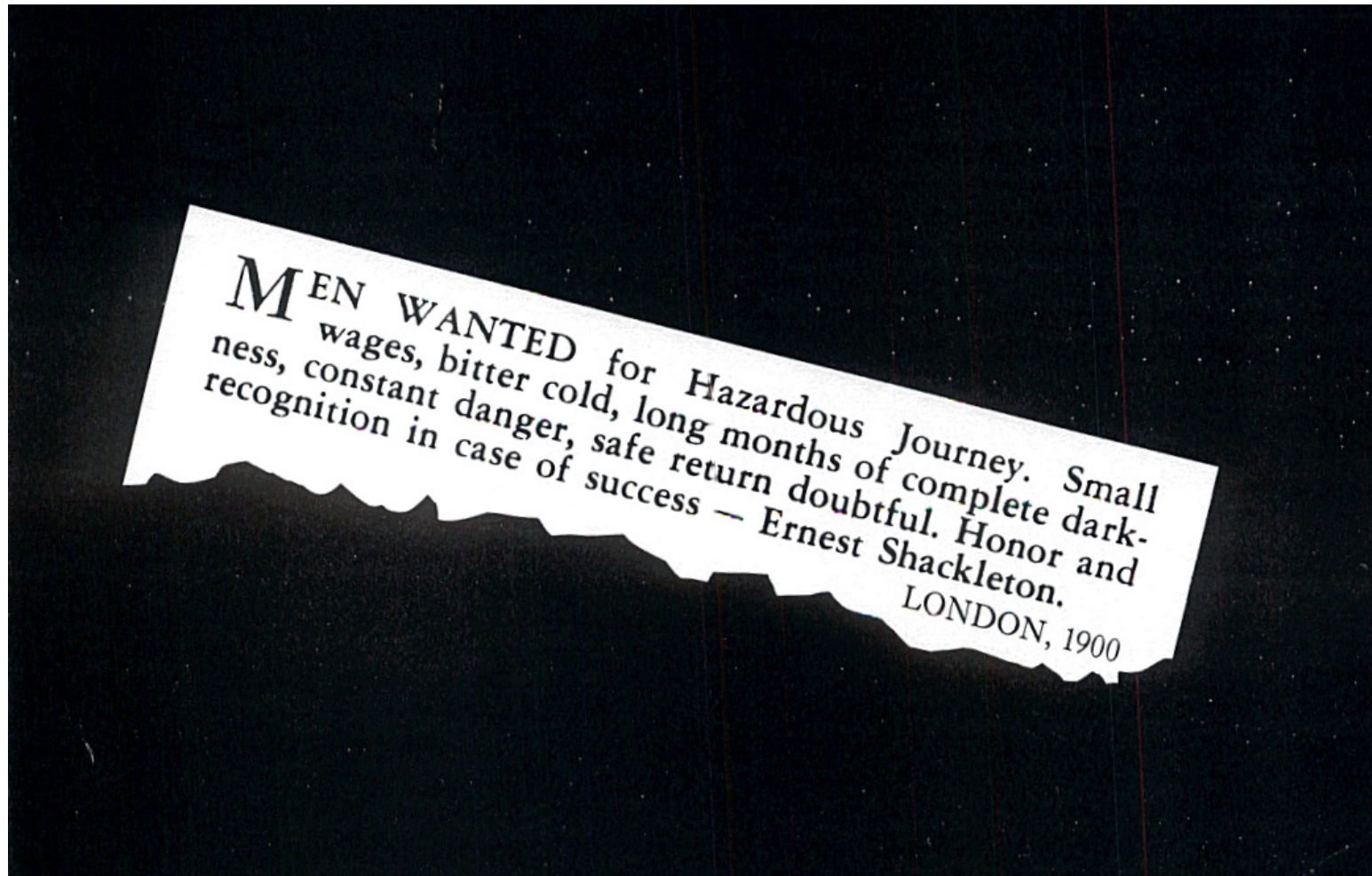
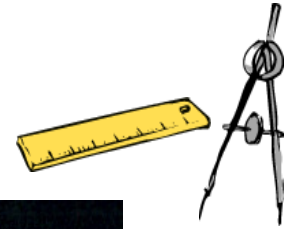
... but a measurement function
doesn't *guarantee* maturity

Organisational change ...

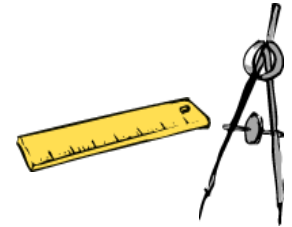


- Any organisational change initiative stands or falls on the strength of senior management support and commitment
- A measurement program, *by itself*, has little chance of achieving long term change

Measurement programs ...

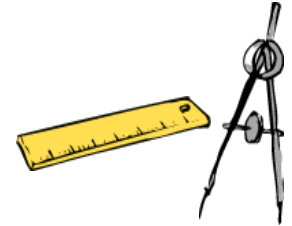


Measurement is a means, not an end.....



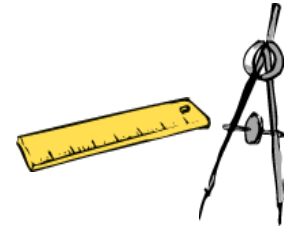
- **Measurement and reporting should be linked to concrete organisational/business goals (a “zero-base” approach is useful)**
- **Goals must be expressed at an appropriate (organisational) level – it will probably be necessary to develop sub-goals**
- **A formal approach to identifying measurements is essential....**
 - *Goal Driven Software Measurement (CMU/SEI)*
 - *Practical Software & Systems Measurement (DoD/US Army)*

The KISS Principle



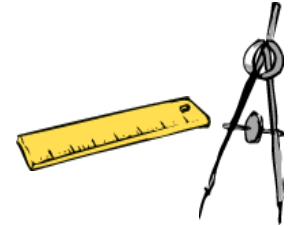
- **Measures should have the form of KPI's (Key Performance Indicators)**
- **Absolute precision is probably not essential, so choose simple measures**
 - use samples of activities
 - may ignore items which are small and/or uniform
 - non-quantitative analysis of infrequent events

Things you shouldn't measure.....



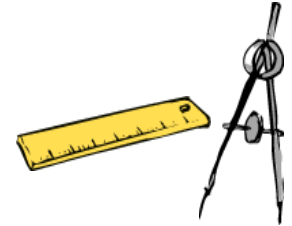
- **Roll-ups (across projects, teams, locations, business groups etc), unless they reflect a specific business goal**
 - For example, measuring on-time delivery of work products for individual projects makes sense; an average over time (for an individual project) or a run/trend chart is better still
 - But what does the average across a group of projects demonstrate? In fact, it hides useful information about the variation between projects; unless there is a related business goal (eg a contract service level that has to be met by the group of projects), it's not a useful measure

Things you shouldn't measure.....



- **Apples and oranges (pooled data from significantly different activities)**
 - For example, productivity from different platforms/development environments; often done to generate a figure of merit for an organisation, or as a service level
 - Such pooled data is of little value for managing, let alone understanding and improving, process performance

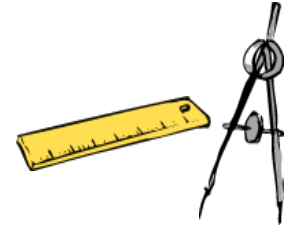
Be sceptical of.....



- **“Packaged” frameworks**
 - Corporate standards
 - Contract requirements (service levels)
 - Consultant or other organisation sources

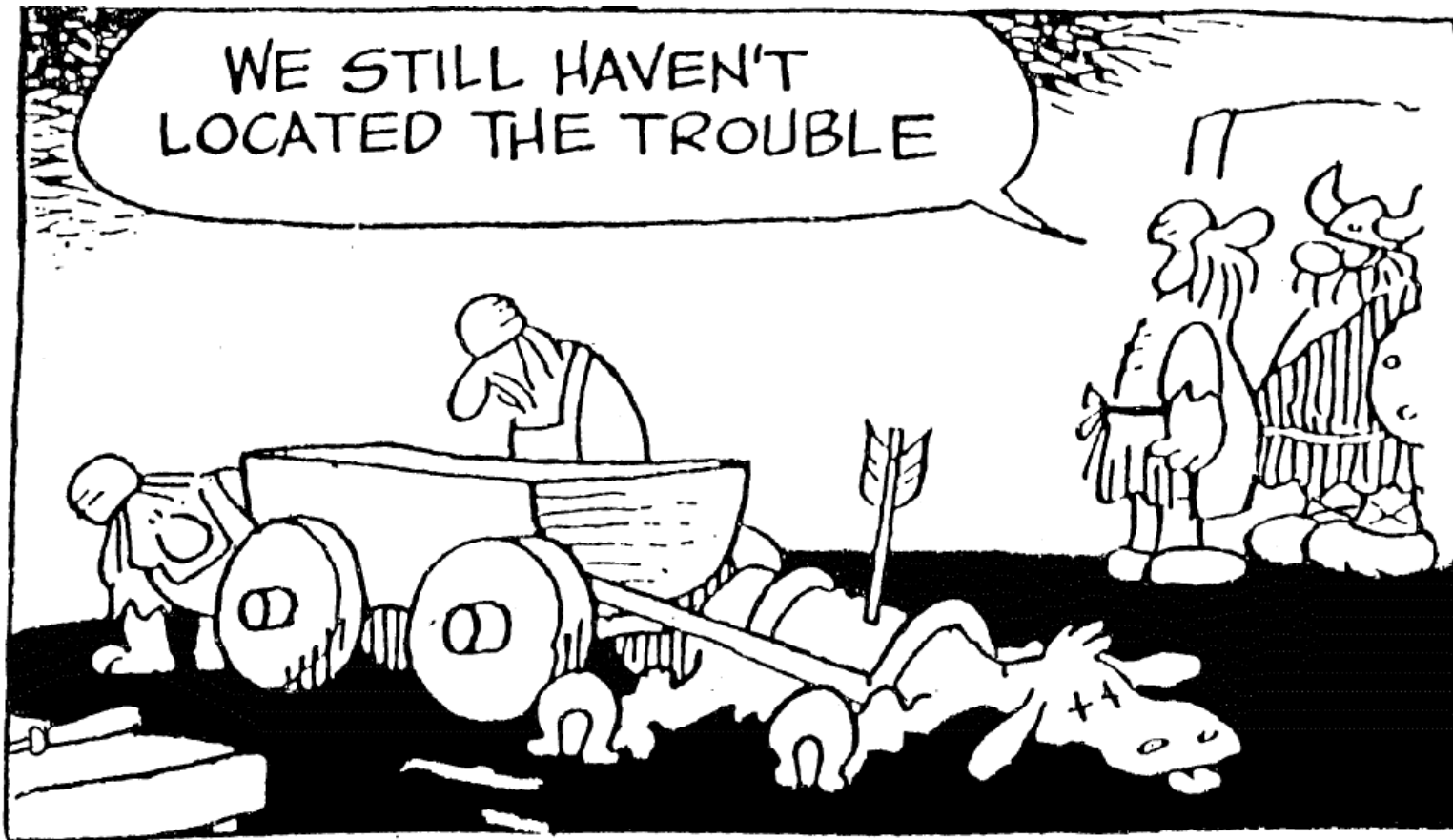
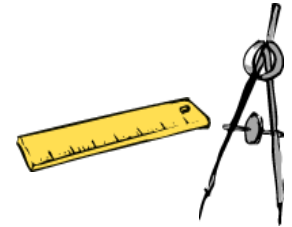
- **Instrumenting the process model**
 - Have clear process improvement goals
 - Measure KPI's and levers/drivers
 - (Non-invasive measurement?)

A corollary from Drucker...

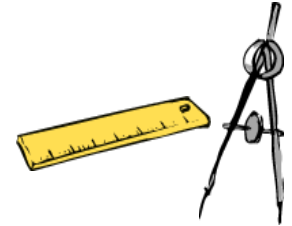


- **Don't measure what you don't manage**
 - at best, it's a waste of effort
 - at worst, it will divert attention from the real issues

Misleading measures ...

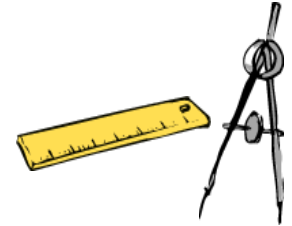


Culture can help.....



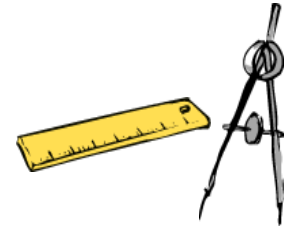
- **Measurement must become a *formal* part of the overall business processes**
- **A profit centre or outsource environment helps foster measurement practices from working level up (because of the need to meet contractual and service level commitments)**

Cultural influences ...

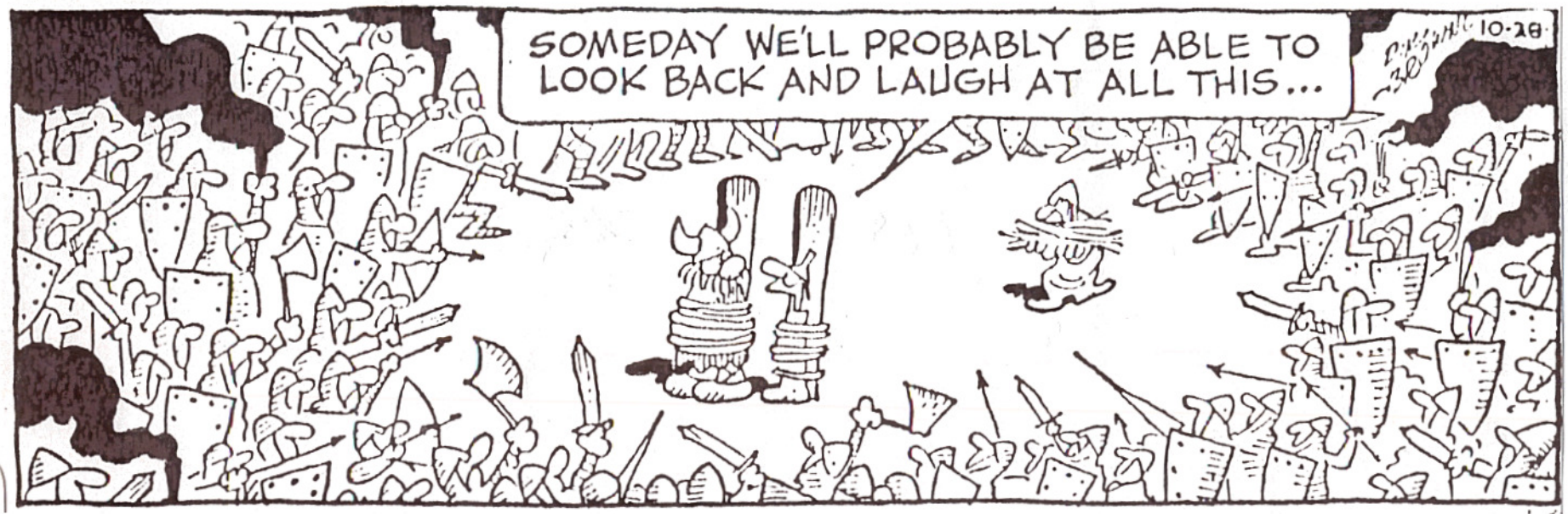
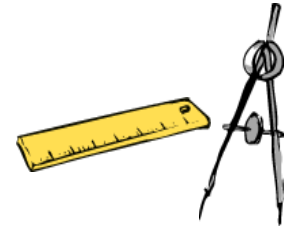


- **Six Sigma family of approaches emphasises the role of measurement**
- **SEI CMMI delineates organisation and project level measurement responsibilities**
- **Personal Software Process (CMU SEI) positions measurement as fundamental to the “engineering” approach, at the working level**

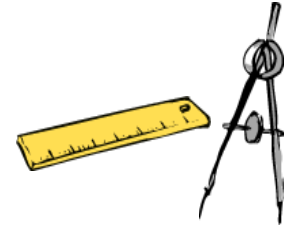
A willingness to listen ...



Some level of repeatable process ...

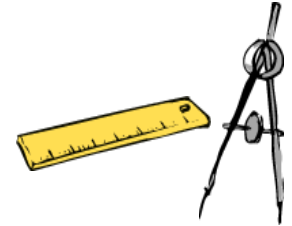


In summary ...



- **Ensure that business and measurement goals are *current* and *aligned***
- **Be aware of the varying levels of maturity in your organisation**
- **Encourage a supportive organisational culture**

Overall ...



The goal is *not* to create a
measurement function ...

... but to create an organisation that
*demand*s a measurement function