Introduction

Harold van Heeringen, >20 years experience in IT, >15 years in software measurement and Metrics

- **METRI** – Senior Financial Data Analysis
- **NESMA** – Board Member International cooperation and partnerships
- **ISBSG** – President
- **COSMIC** - Dutch representative in the International Advisory Council (IAC)
- **ICEAA** - Trainer of CEBoK chapter 12: Software Cost Estimation
- **sCEBoK** Initiator and module developer
- **DACE** (Dutch Association for Cost Engineers) – working group Parametric analysis
- Presenter at many international conferences on software measurement, estimation and benchmarking

harold.van.heeringen@metrigroup.com

METRI: [www.metrigroup.com](http://www.metrigroup.com)
ISBSG: [www.isbsg.org](http://www.isbsg.org)
Nesma: [www.nesma.org](http://www.nesma.org)
See the big picture
Agile Teams

Waterfall

Fixed

Requirements

Resources

Time

Agile

ITERATIVE (value) driven

PLAN driven

Estimated

Resources

Time

Features

The plan creates cost/schedule estimates

Release themes and feature intent drive estimates
Risks shift back to the customer

- **Time and Material (until 2000)**
  - Customer: 90%
  - Supplier: 10%

- **Fixed Price (2000 - 2010)**
  - Customer: 80%
  - Supplier: 20%

- **Agile teams onsite (>2010)**
  - Customer: 95%
  - Supplier: 5%
Agile Hypecycle

- Peak of Inflated Expectations
- Trough of Disillusionment
- Slope of Enlightenment
- Plateau of Productivity

2019: Story Points
Metrics in Agile teams

- **Productivity**: Hours / Story Points
- **Cost Efficiency**: Cost / Story Points
- **Velocity**: Story Points per month
- **Project Quality**: Defects / Story Points
Key metrics for agile teams

- Productivity: Effort hours spent
  - Size of the delivered Software Product

- Cost Efficiency: Team cost
  - Size of the delivered Software Product

- Velocity: Duration (months)
  - Size of the delivered Software Product

- Product Quality: Defects Delivered
  - Size of the delivered Software Product

METRI Application Services:
- Agile Team Performance Measurement
- Supplier Performance Measurement
- IT and Software Cost Estimation
- Reality Checks
- Bid Support
- Price models
- Value Driven Contracting

- **Functional Size** is the most important cost driver in most application services
- **Functional size** is hard/impractical to measure, especially for large applications

CAST Tooling: Software intelligence
- Source Code analytics
- Quality and Risk Metrics
- Technical Debt
- Risk assessments
- Automated **Functional Size** measurement
  - Based on international standard (OMG/CISQ). Comparable to IFPUG/Nesma function points!

Agile Team Performance Measurement
Practical case

Productivity Index

Cost Index

Quality Index

Velocity Index

2018Q2

2019Q1

2019Q2

2019Q3
Conclusions

2019: Story Points

Agile Team Performance Measurement

Visibility

Technology Trigger

Peak of Inflated Expectations

Plateau of Productivity

Slope of Enlightenment

Trough of Disillusionment

Time