Software Improvement Group

Introducing the Software Improvement Group and our *productivity capability*

July 2016

Software Improvement Group

About us

Who are we?

- Specialized consultancy firm for costs, quality and risks of software systems and landscapes
- Founded in 2000 at the “Centrum voor Wiskunde en Informatica” in Amsterdam
- Independent and objective

What do we do?

- Factual advise supported by the use of automated tools for source code analysis
- Assessment of a variety of technologies by using technology methods

SIG is proud to work with our clients

How do we operate?

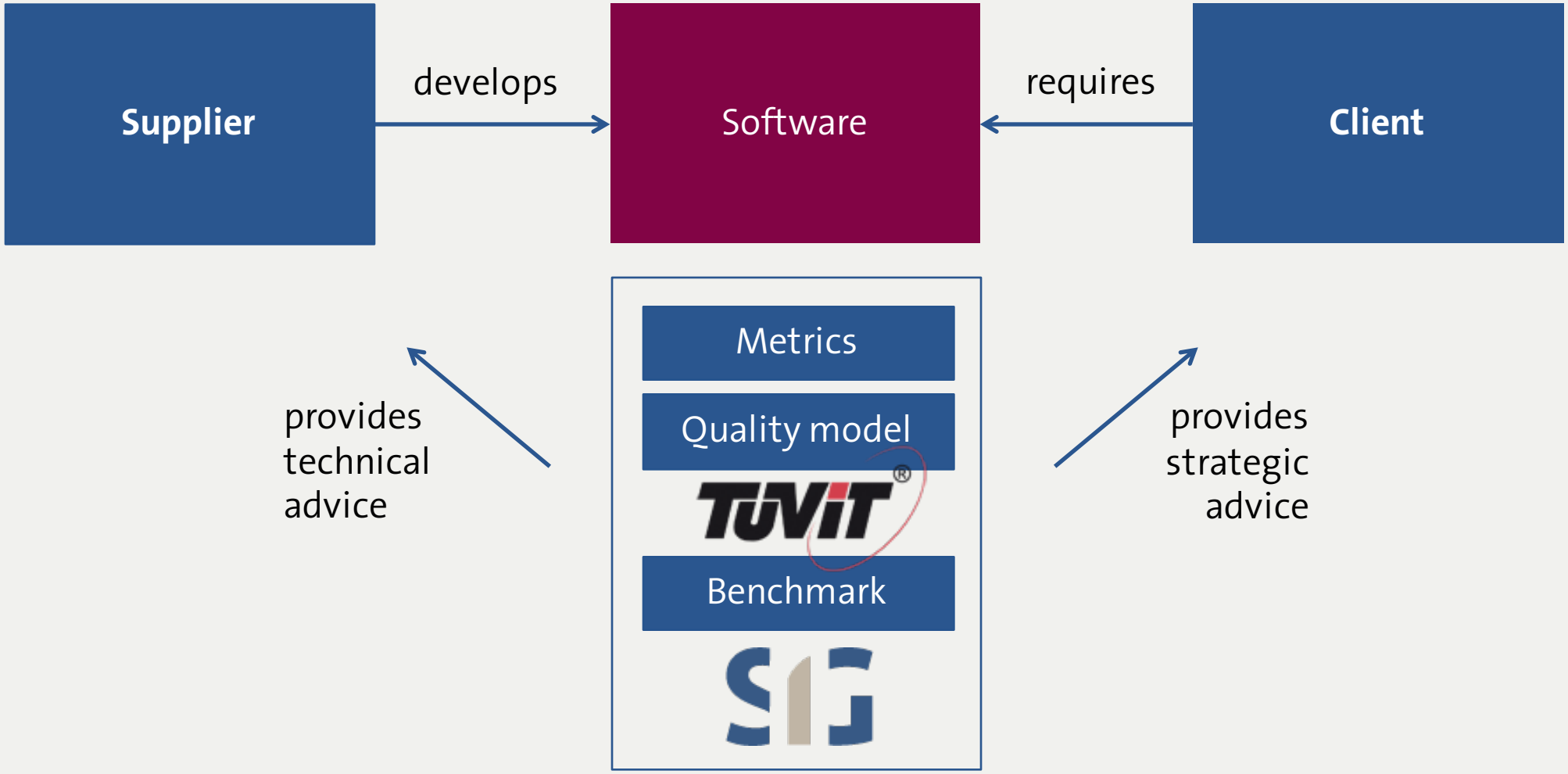
The SIG Capabilities in our tool set

› SIG Capabilities

› SIG ISO IEC 25010 Certified Capabilities

SIG approach

Independent, non-invasive, industry-benchmarked assessment and advice

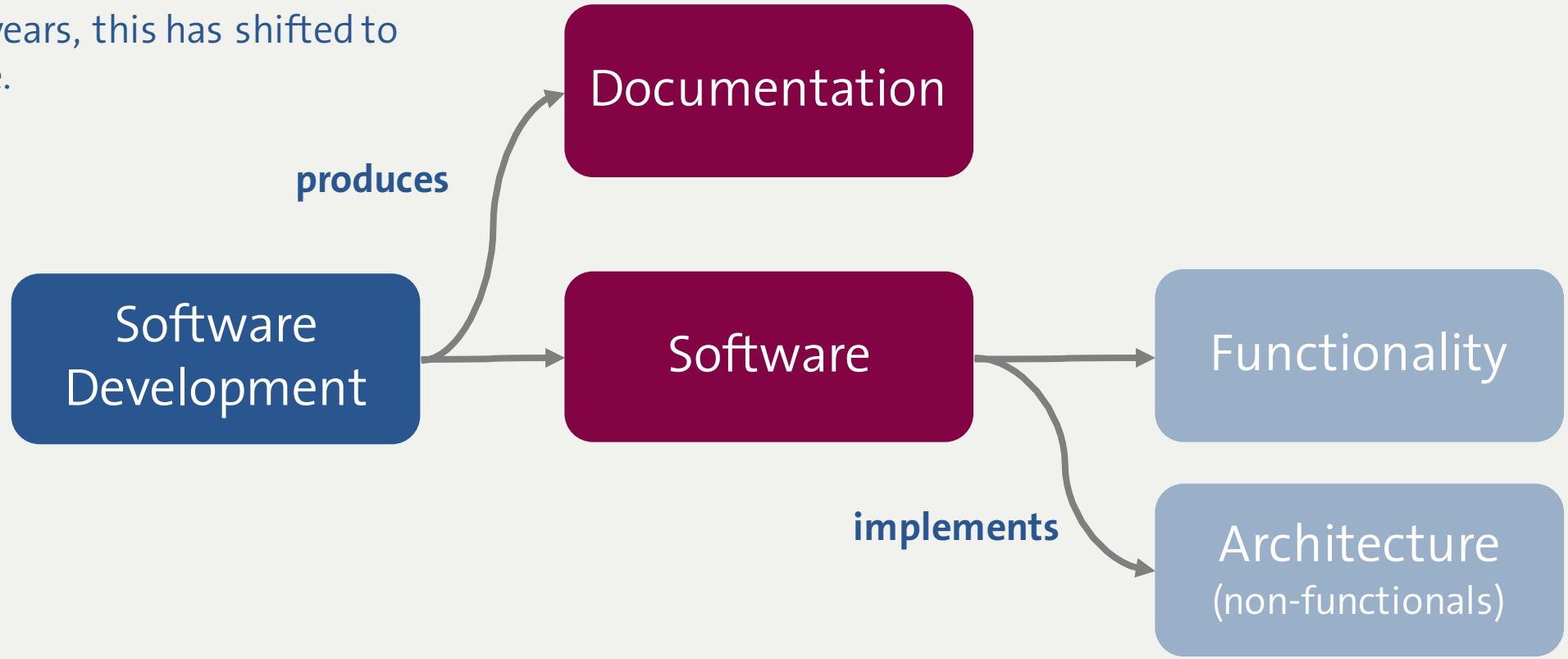


Results of software development

Actual and derived products

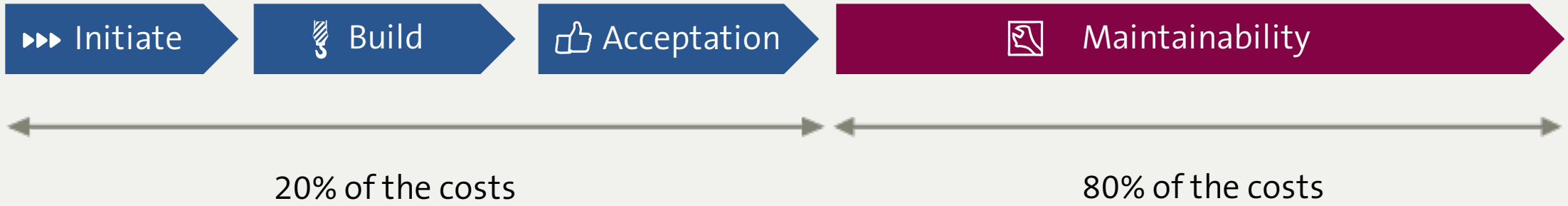
Traditionally, software development
Produced documents and software.

The past 15 years, this has shifted to
just software.



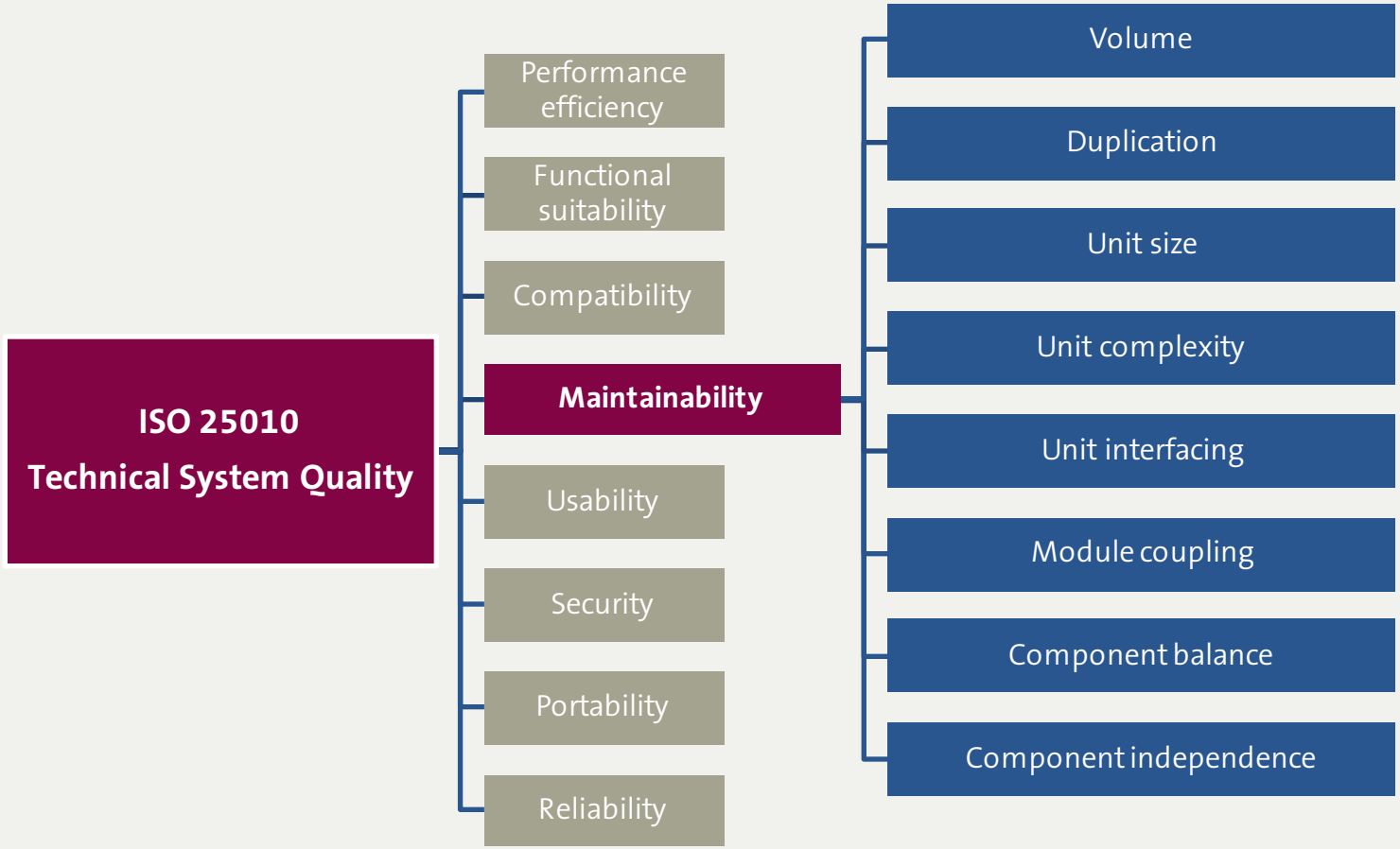
Why attention to software quality?

Product quality, architecture and development process



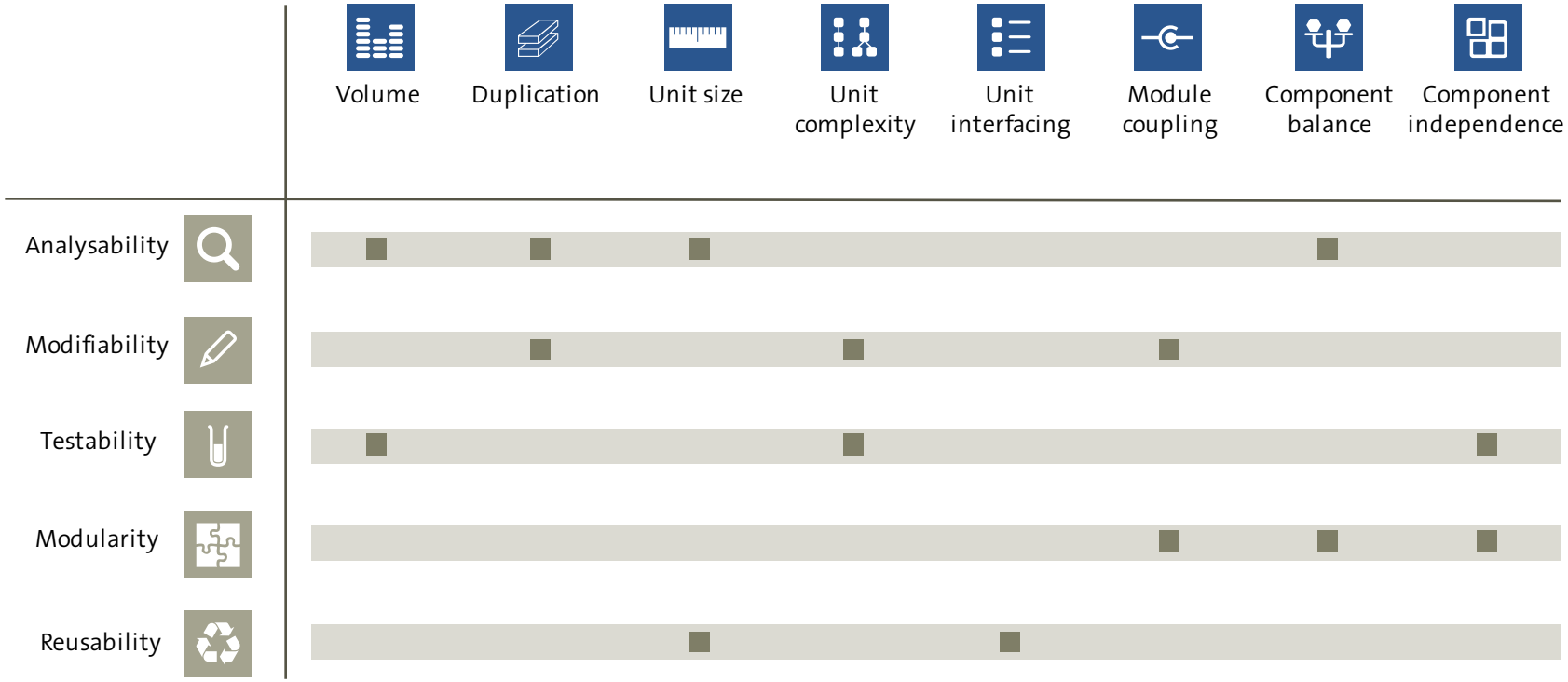
Technical software quality

From ISO-standard to metrics



SIG Quality Model

Measuring ISO 25010 maintainability according to the SIG model



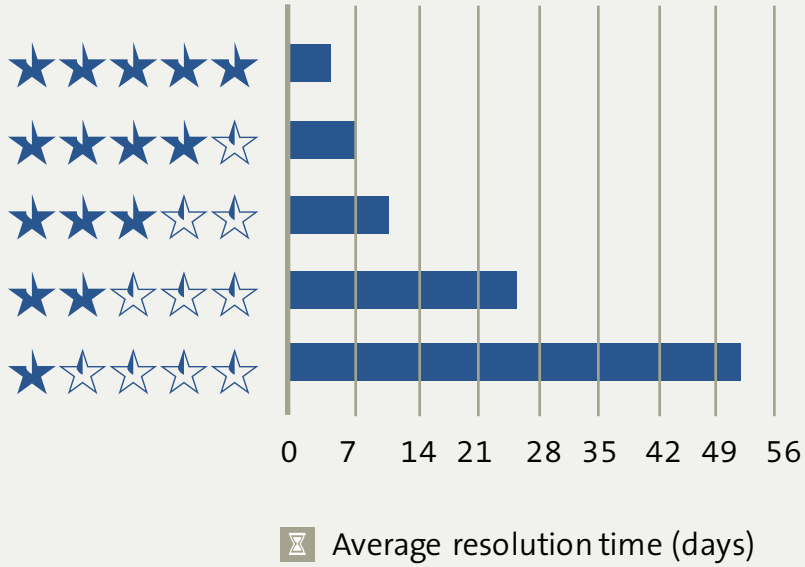
The measurements of the implementation lead to a benchmark score (in stars from ★☆☆☆☆ to ★★★★★) where ★★★☆☆ is market average.

Quantifying the advantages of higher quality

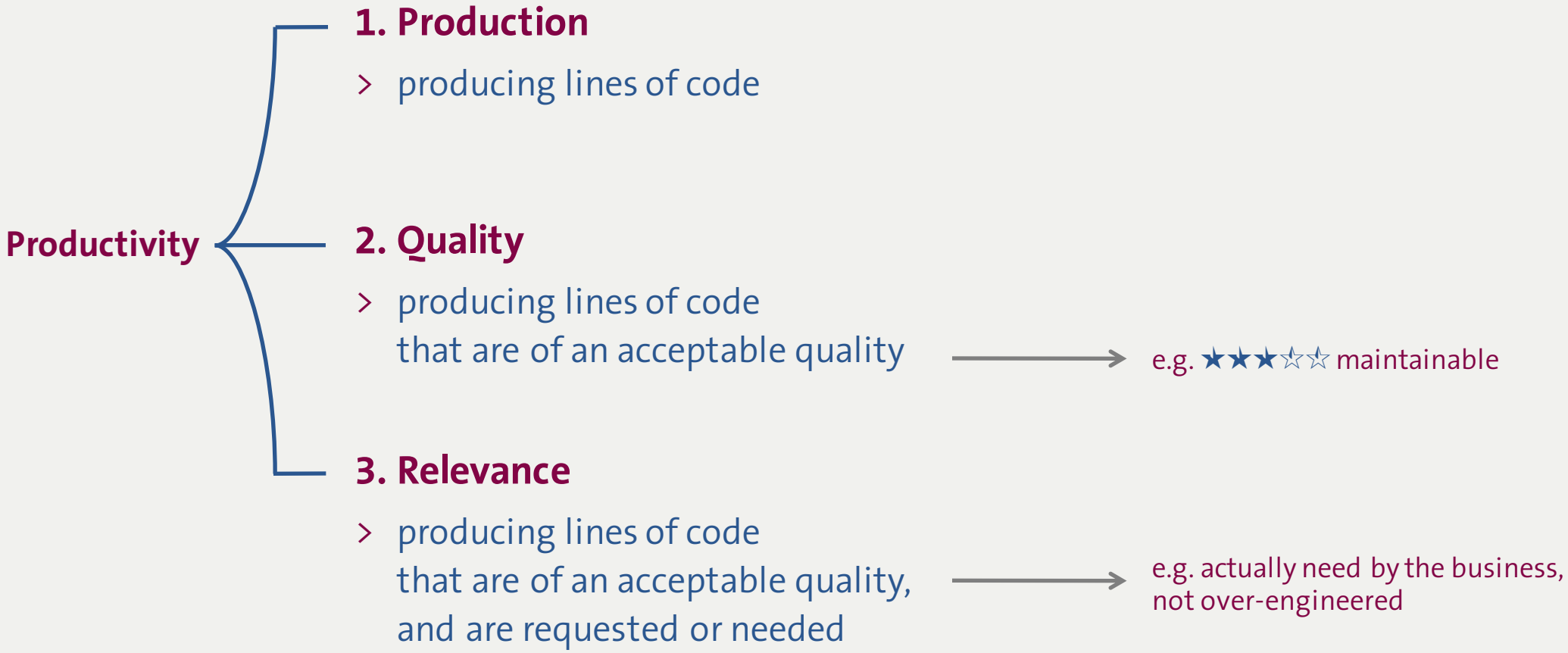
New functionality can be implemented faster in more maintainable systems

A higher software product quality leads to:

- The faster implementation of enhancements and the solution of defects
- The throughput rate improves by factor 3.5 to 4.0 between 2 and 4 stars

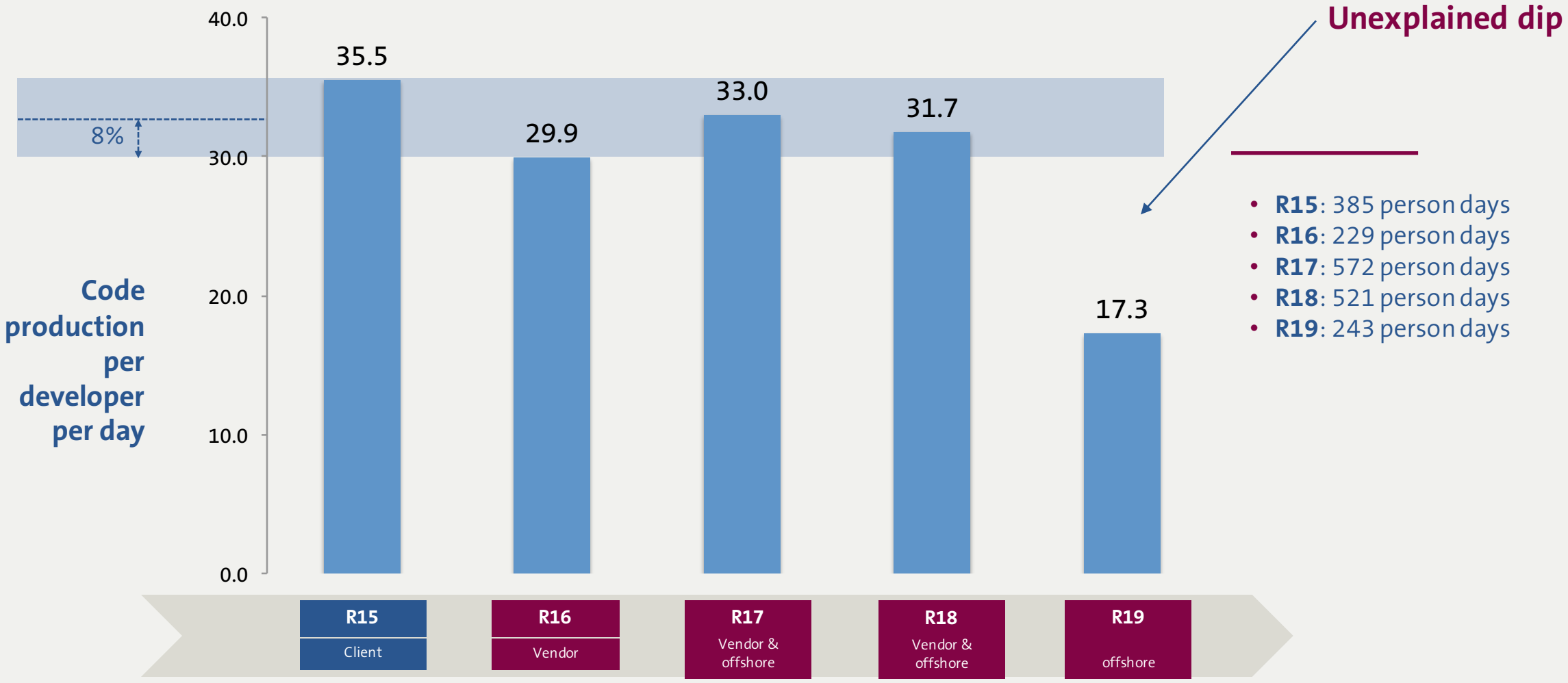


Defining productivity



Case Example 1 – Output-based production measurement (German company)

€30,000 was claimed back for Release 19 in April 2016



- **R15**: 385 person days
- **R16**: 229 person days
- **R17**: 572 person days
- **R18**: 521 person days
- **R19**: 243 person days

Case Example 2 – Measure production (Dutch company)

Development costs for project A are 33% - 50% too high – found in February 2016

	Project A – Portal enhancement	Project B – Portal enhancement	Project C – Mobile App development
Supplier	X		Y
Project cost	€ 316 000	€ 330 000	€ 1.000 000
Development cost	€ 192 000 (61%)	€ 264 000 (80%)	€ 700 000 (70%)
Production (backend)	4.900 lines of code	5.600 lines of code	23 000 lines of code
Cost per line of code	€ 40	€ 30	€ 30
Quality of delivered work	★★☆☆☆ (2.3)	★★★☆☆ (3.0)	★★★★☆ (3.9)

Case Example 3 – Challenging vendor quotes upfront (Dutch company)

Proposed refactoring project: 594 man days (€ 395 000) / **Cancelled by SIG** in March 2016

Not the right effect

- Proposed System 1 refactoring project: 594 man days (€ 395 000)
  allows refactoring of only 5% to 10% of the code base

Not the right work

- Majority of effort (62%) is reserved for the frontend, which has a shorter life span
  Investment in the backend has a better ROI
- Multiple parties perform development on the Frontend:
  Without explicit quality requirements the effect of the investment will quickly be reversed

Not the right approach

- Proposed project is unlikely to succeed – ROI will be zero
  (Digital department: “Refactoring too complex to merge, will not go live”)

SIG in Energy

Production

Take-over Power plant
Quality Framework development
Smart outdoor platform

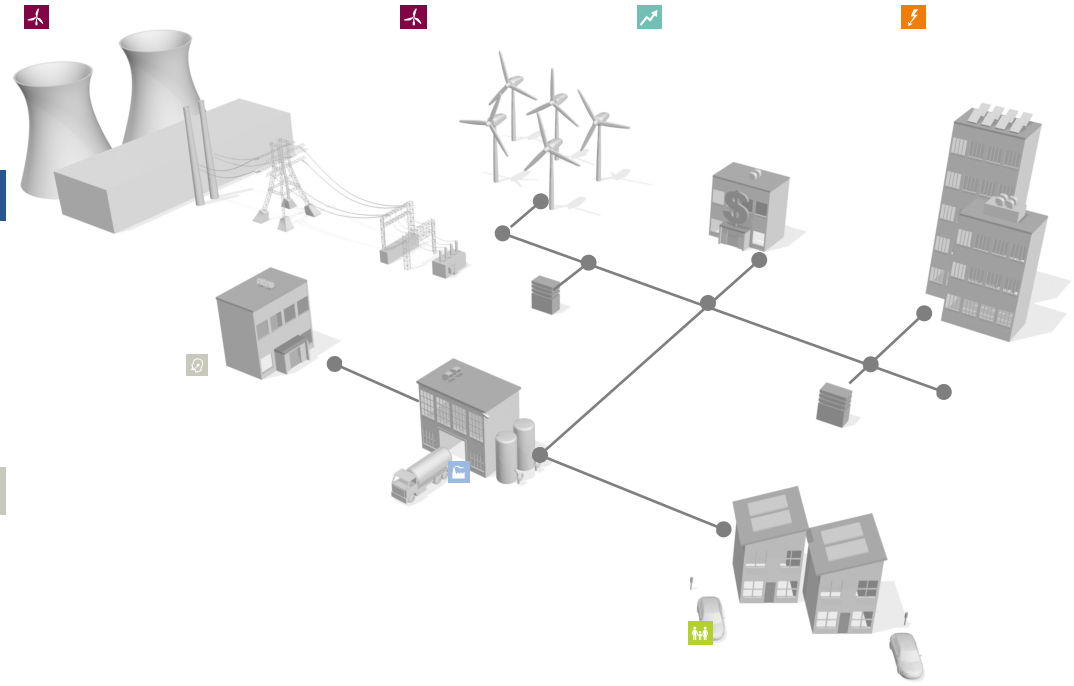
Trade

Accessing reliability of trade system

DNO

Client domain
Improving SAP Systems
Digitizing sub stations
Simplifying Tibco integration

Energy



Supplier

Smart thermostat
Meter data exchange
Scalability meter data
Monitoring Billing
Optimizing CRM
Quality Software Dev-elopment Agile teams

Consumers

Domotica systems
Head end / Smart Meters

Corporate Consumers

Smart Building platform

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