

This report provides a data-driven "Reality Check" for the proposed investment in Project XYZ by Company Z. In an industry where software projects often exceed budgets due to subjective estimation techniques, this analysis provides an objective counter-balance. By applying international standards and parametric modelling, we have translated the functional requirements of Project XYZ into a realistic projection of effort, cost, and staffing requirements.

Software Investment Reality Check

**Final Report:
Project XYZ**

Company Z



Software Investment Reality Check

Project XYZ

Date:

Customer

Attn. Mr. X

Function/role: IT Manager

Company: Z

Email: example@company.com

Contents

| | |
|--|----|
| Executive Summary: Software Investment Reality Check | 4 |
| Purpose of this Reality Check..... | 4 |
| Key Findings..... | 4 |
| Strategic Recommendations..... | 5 |
| Main Conclusion | 6 |
| Chapter 2: Project Context & Scope | 7 |
| 2.1 Project Background..... | 7 |
| 2.2 Technical Landscape | 7 |
| 2.3 The Agile/Waterfall Hybrid Reality | 7 |
| Chapter 3: Methodology: The Science of Estimation..... | 8 |
| 3.1 Functional Sizing (Nesma EFS) | 8 |
| 3.2 Parametric Modelling (TruePlanning) | 8 |
| 3.3 The Power of 13,000 Data Points | 8 |
| Chapter 4: Functional Size Analysis | 9 |
| 4.1 Measurement Results | 9 |
| 4.2 Accounting for Change..... | 9 |
| 4.3 Comparative Size | 9 |
| Chapter 5: Resource & Effort Projections..... | 10 |
| 5.1 Total Effort Distribution..... | 10 |
| 5.2 Team Composition & Roles..... | 10 |
| 5.3 Productivity Benchmarking..... | 10 |
| Chapter 6: Financial Investment Analysis | 11 |
| 6.1 Total Cost of Ownership (TCO) | 11 |
| 6.2 Cost per Functional Unit | 11 |
| 6.3 Sensitivity Analysis..... | 11 |
| Chapter 7: Schedule & Delivery Speed..... | 12 |
| 7.1 Time-to-Market | 12 |
| 7.2 Staffing Ramp-up | 12 |
| Chapter 8: Risk Assessment & Mitigation..... | 13 |
| 8.1 The Cone of Uncertainty | 13 |
| 8.2 Technical & Operational Risks | 13 |
| 8.3 Benchmarking Against Failure..... | 13 |
| Chapter 9: Strategic Recommendations & Conclusion | 14 |
| 9.1 Governance Framework | 14 |

9.2 KPI Integration 14

9.3 Final Verdict 14

Appendix A: Detailed Nesma EFS Measurement Log 15

Appendix B: Estimation Tool Parameter Settings. 16

Appendix C: Metric Glossary 17

Appendix D: About AgileBenchmark..... 18

Executive Summary: Software Investment Reality Check Project XYZ

Purpose of this Reality Check

The objective of this Software Investment Reality Check is to provide the leadership of Company Z with an empirical, data-driven foundation for the budgetary approval of Project XYZ.

This report replaces subjective "gut feelings" about the scope of the functionality to deliver with Functional Size Measurement (FSM). By applying the Nesma Easy Functional Sizing (EFS) method (ISO/IEC 25986), we have quantified the functional requirements (User Stories) into a standardized unit of measure (FP). This measurement was then processed through Unison TruePlanning, a leading parametric estimation engine, and calibrated against the ISBSG (International Software Benchmarking Standards Group) database of over 13,000 completed projects.

The goal is to move Project XYZ into the "Zone of Reality," aligning stakeholder expectations with industry-proven productivity rates and cost structures.

Key Findings

Our analysis reveals that Project XYZ is **significantly underestimated** by Company Z, with a **very high chance of substantial overruns in time, effort, and cost** if the current planning trajectory is maintained.

A. Functional Size and Scope Creep

The project was measured at a baseline of 16,500 Function Points (FP). However, historical data for projects of this complexity indicates a high probability of scope evolution. The likely Functional Size to be delivered is 19,800 FP.

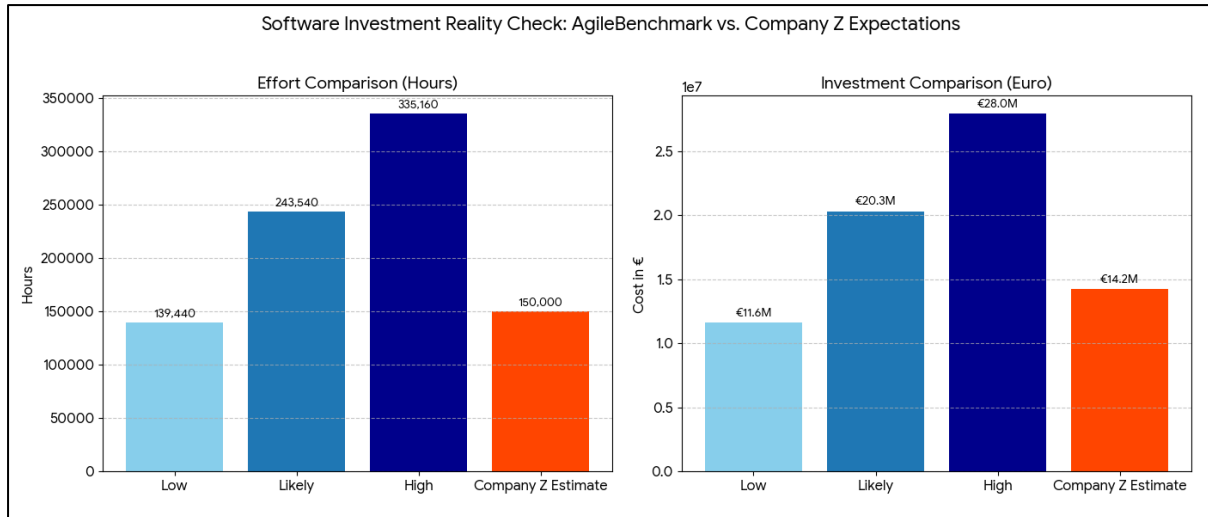
The measurement reflects a "Low" scenario of 16,800 FP and a "High" scenario of 22,800 FP.

B. Investment and Effort

Based on the likely functional size and the estimation parameters (including technology stack Java), the parametric model predicts the following resource requirements:

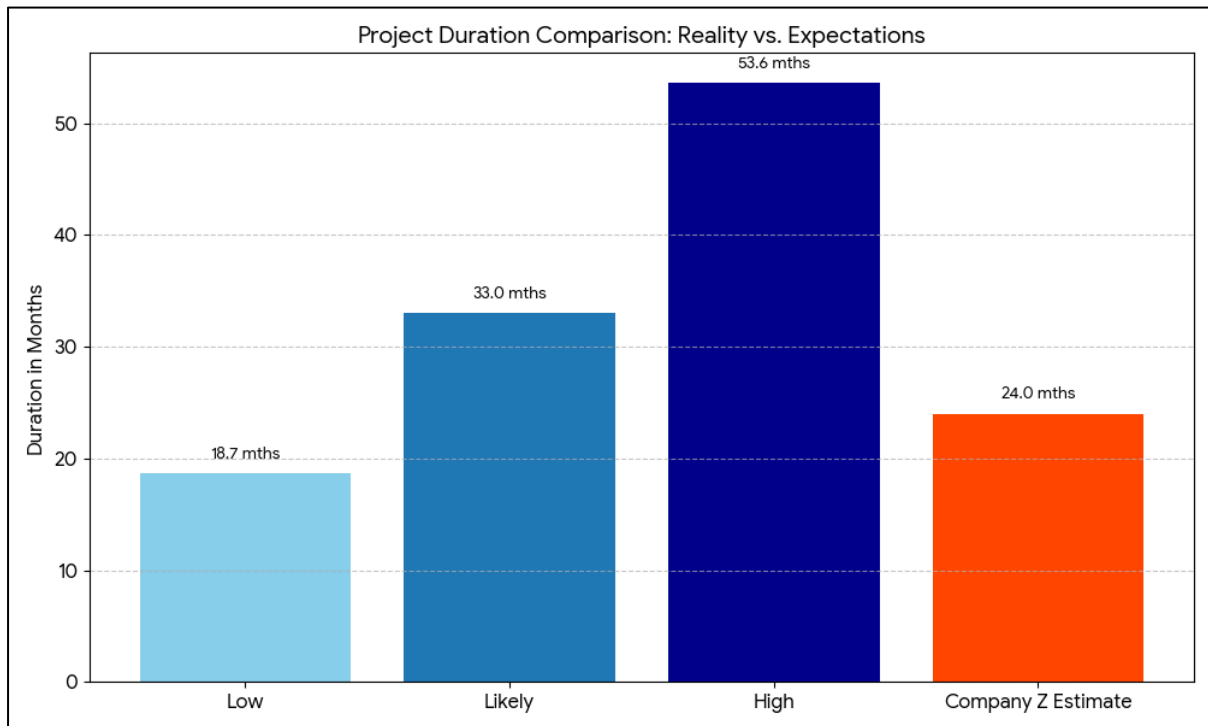
- Total Likely Effort: 243,540 hours.
- Total Likely Investment: €20,311,236.
- Product Delivery Rate (PDR): 12.3 hours per Function Point.

This PDR of 12.3 is consistent with high-performing Agile teams operating at this scale. The investment is based on a blended hourly rate of €83.40, reflecting a balanced team of Junior, Medior, and Senior developers, along with specialized roles such as Architects, DevOps Engineers, and Scrum Masters.



C. Delivery Capacity

To meet even the "Likely" timeline, a peak staffing level of **46 Full-Time Equivalent (FTE)** across 5 teams is required. If Company Z is currently planning with fewer resources or a shorter timeline, the project will face a "Resource Crunch," leading to compromised quality and technical debt that will further inflate future costs. Economic Unit: €1,025.82 per Function Point. This figure serves as the primary benchmark for assessing value-for-money as the project progresses.



Strategic Recommendations

To mitigate the risk of a high-profile project failure, AgileBenchmark recommends the following immediate actions:

I. Re-Baseline the Budget Immediately

Company Z must align its financial reserves with the **Likely Scenario of €20.3M**. Attempting to execute Project XYZ with an underestimated budget will result in "Death March" dynamics, high staff turnover, and eventually, a more expensive mid-project correction.

II. Implement Functional Governance (Cost per FP)

Use the benchmarked rate of **€1,025.82 per Function Point** as the primary KPI. This allows leadership to monitor the "value-for-money" in real-time. If the cost to deliver a Function Point exceeds this benchmark in the early sprints, it serves as an early-warning system for further overruns.

III. Validate Productivity Early

The projected **Product Delivery Rate (PDR) of 12.3 h/FP** is achievable but requires high maturity. We recommend a "Calibration Sprint" to measure actual team velocity in EFS units. This will confirm whether the project is trending toward the "Likely" or the "High" (€27.9M) scenario.

IV. Prioritize "Must-Have" Functionality

Given the high functional volume, Company Z should use the EFS measurement to rank requirements by business value versus functional cost. If the €20M investment exceeds the current appetite, the only viable path is a **reduction in functional scope**, not an increase in "estimated" speed.

Main Conclusion

The current path for Project XYZ carries extreme risk. By acknowledging the **€20.3M/243k-hour reality** now, Company Z can transition from a position of high risk to one of controlled, predictable delivery. AgileBenchmark remains committed to supporting this transition through ongoing measurement and benchmarking.

Chapter 2: Project Context & Scope

2.1 Project Background

Overview of Project XYZ goals and the functional requirements provided (User Stories).

2.2 Technical Landscape

Summary of the workshop findings (Java technology, 5-team structure, DevOps maturity).

2.3 The Agile/Waterfall Hybrid Reality

Addressing how parametric estimation supports Agile delivery.

Chapter 3: Methodology: The Science of Estimation

3.1 Functional Sizing (Nesma EFS)

Explanation of the ISO/IEC 25986 standard.

3.2 Parametric Modelling (TruePlanning)

Introduction to the Unison tool and how it calculates cost/effort based on complexity factors.

3.3 The Power of 13,000 Data Points

How the ISBSG and AgileBenchmark databases validate the estimate against global industry peers.

Chapter 4: Functional Size Analysis

4.1 Measurement Results

Detailed breakdown of the Functional Size Measurement range.

4.2 Accounting for Change

Analysis of the 20% likely Scope Creep and how it impacts the Functional Size to deliver figure.

4.3 Comparative Size

What does a 19,800 FP system represent in terms of enterprise complexity?

Chapter 5: Resource & Effort Projections

5.1 Total Effort Distribution

A Detailed Breakdown of the 243,540 hours across Low, Likely, and High scenarios.

5.2 Team Composition & Roles

A Detailed look at the FTE requirements (Senior/Medior/Junior mix, QA, and Architecture).

5.3 Productivity Benchmarking

Analysis of the PDR (Product Delivery Rate) of \$12.3\$ h/FP and how it compares to Dutch market averages.

Chapter 6: Financial Investment Analysis

6.1 Total Cost of Ownership (TCO)

Detailed financial breakdown of the €20.3M "Likely" scenario.

6.2 Cost per Functional Unit

Analysis of the €\$1,025.82\$/FP metric.

6.3 Sensitivity Analysis

Exploring the "High" scenario (€27.9M) risks and the "Low" scenario (€11.6M) assumptions.

Chapter 7: Schedule & Delivery Speed

7.1 Time-to-Market

Estimating the release schedule based on the throughput of 5 teams.

7.2 Staffing Ramp-up

The impact of onboarding and team coordination on the delivery timeline.

Chapter 8: Risk Assessment & Mitigation

8.1 The Cone of Uncertainty

Visualizing the narrowing of estimates as the project progresses.

8.2 Technical & Operational Risks

Potential bottlenecks in integration or infrastructure.

8.3 Benchmarking Against Failure

Comparing the current plan against ISBSG "abandoned project" profiles to ensure safety.

Chapter 9: Strategic Recommendations & Conclusion

9.1 Governance Framework

How to use functional size to manage the vendor or internal teams.

9.2 KPI Integration

Using PDR and Cost/FP as ongoing health checks.

9.3 Final Verdict

Summary of the investment's realism and readiness for execution.

Appendix A: Detailed Nesma EFS Measurement Log

Detailed Nesma or
IFPUG FPA Analysis
Report

Appendix B: Estimation Tool Parameter Settings.

Parameter Settings
the Estimation Tool

Appendix C: Metric Glossary

To ensure total clarity across all stakeholders, this glossary defines the objective indices used throughout the **Software Investment Reality Check**. These metrics are calculated by comparing Team X's functional output against the **AgileBenchmark** peer group of selected projects out of the AgileBenchmark database with over 13.500 data points.

Project Delivery Rate (PDR): * Definition: The amount of human effort required to deliver a single unit of software.

- **Formula: Total Hours / Functional Size**
- **Context:** This is the primary measure of efficiency. A lower PDR indicates a more efficient delivery engine, as fewer hours are needed to produce the same amount of value.

Cost Efficiency:

- **Definition:** The financial investment required to produce a single unit of software functionality.
- **Formula: Total Project Cost / Functional Size**
- **Context:** This allows leadership to see the "unit price" of their software. It is the most effective way to compare the ROI of different teams or vendors.

Delivery Speed:

- **Definition:** The rate at which functional value is moved from "concept" to "production" over time.
- **Formula: Functional Size / Calendar Months**
- **Context:** Unlike "Velocity" (which uses subjective points), this measures the actual growth of the software per month. It indicates the team's true time-to-market capability.

Appendix D: About AgileBenchmark

AgileBenchmark

AgileBenchmark is a specialized IT management consultancy firm dedicated to data-driven solutions for software development, with a focus on software cost estimation, agile team benchmarking, output-based contracting (aligned with NPR 5333), and code quality measurement. Founded by Drs. Harold van Heeringen, a globally recognized expert with over 25 years of experience in IT and application development, AgileBenchmark empowers organizations worldwide to achieve excellence in agile software development.

Leveraging deep expertise, internationally acclaimed certifications (ICEAA Software Cost Estimation, Nesma CFPA, COSMIC, CAST), and innovative methodologies like the Easy Functional Sizing method, we deliver precise measurements, insightful benchmarking, and tailored solutions to optimize team performance and value delivery. Operating as a flexible, scalable consultancy from the Netherlands, AgileBenchmark serves mid-sized to large enterprises with custom software cost and value needs, offering primarily remote services with occasional onsite support to drive sustainable success for our clients.

About the Founder

Drs. Harold van Heeringen, the founder of AgileBenchmark, brings over 25 years of distinguished experience in the IT industry, specializing in application development and data-driven consultancy. With a 17-year tenure at Sogeti Nederland B.V., Harold progressed from a Cobol programmer to leading the metrics desk, where he honed his expertise in software cost estimation and project metrics for fixed-price, fixed-date projects.

Over the past decade at IDC Metri, as a Senior and Principal Consultant, he delivered high-quality consultancy services to a diverse range of Dutch and international clients, focusing on IT Intelligence services such as Software Cost Estimation, Agile Team Performance Measurement, Software Code Quality Measurement, Lifecycle Management (LCM), and Project Portfolio Management (PPM) maturity assessments for clients like the Dutch Ministries of I&W and J&V. As President of Nesma and Immediate Past President and board member of ISBSG, Harold has built a stellar international reputation, backed by certifications like ICEAA Software Cost Estimation and Nesma Certified Function Point Analyst (CFPA).

His extensive publications, white papers, and presentations at global conferences, combined with training in management, project management, financial, and communication skills, position him uniquely to deliver innovative, high-impact solutions through AgileBenchmark.

Nesma (Netherlands Software Metrics Association) and ISBSG (International Software Benchmarking Standards Group) are globally recognized organizations dedicated to advancing software measurement and benchmarking. Nesma, where Harold van Heeringen serves as President, is a leading authority in software metrics, promoting standards like the Easy Functional Sizing method and the NPR 5333 guideline for output-based measurement of agile development teams. ISBSG, where Harold is Immediate Past President and board

member, maintains a comprehensive repository of software project data, enabling organizations worldwide to benchmark performance and improve cost estimation and productivity.

Together, these organizations underpin AgileBenchmark's data-driven approach, ensuring clients benefit from industry-leading standards and insights.



AgileBenchmark Founder Harold van Heeringen



AgileBenchmark

van Goghlaan 20
9646DV Veendam
info@agilebenchmark.com
www.AgileBenchmark.com

