

# Analysis of Data Warehouse and BI Projects



## Introduction

As the ISBSG repository contains more data of projects carried out in an agile way of working, analysis of differences between traditional projects and agile projects becomes more significant.

The ISBSG collects industry data, where output is measured using ISO/IEC standardized and therefore objective, repeatable, auditable methods, such as Nesma, IFPUG and COSMIC function points. Typical key metrics based on function points are:

- Project Delivery Rate (PDR)<sup>1</sup>: Hours spent per function point
- Cost efficiency: Cost (or Price) per function point
- Quality: Defects per function point (in test and/or 1<sup>st</sup> month of production)
- Speed: Function points delivered per calendar month.

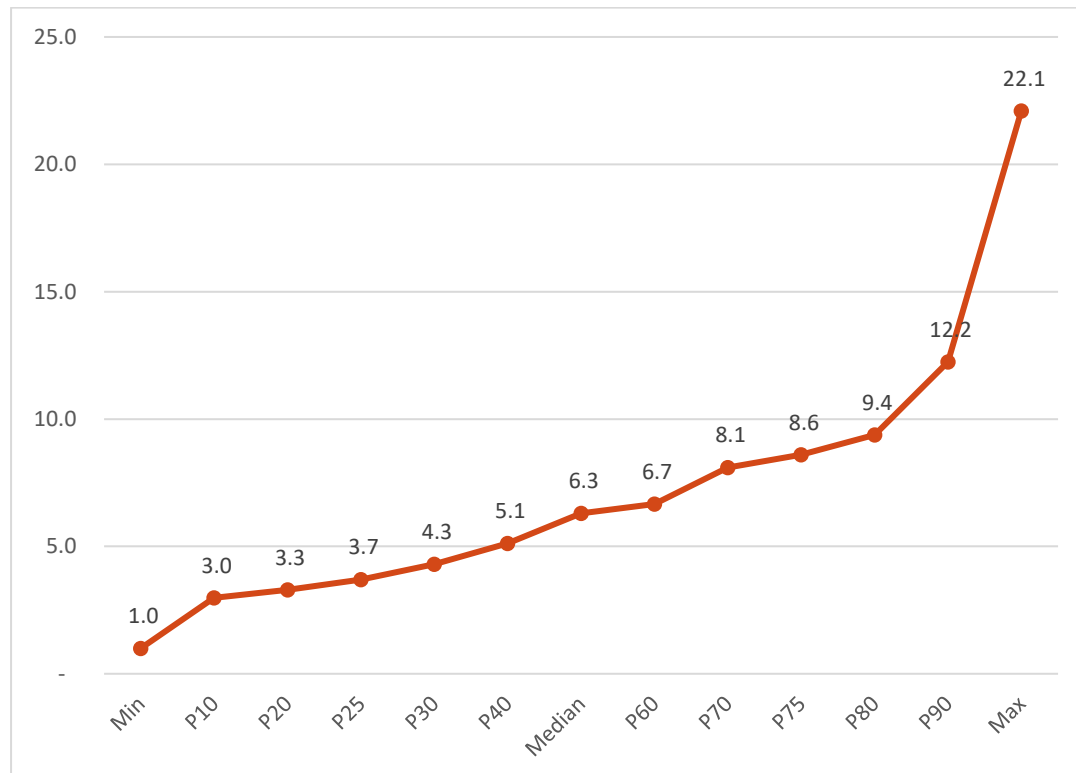
The ISBSG 'New Developments & Enhancements' repository contains thousands of completed projects, for which these metrics are calculated. This enables organizations to use this industry data for fact-based understanding and decision making. In this short paper, we are going to take a look at the projects submitted using the COSMIC standard for functional size measurement.

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<sup>1</sup> The PDR is the inverse of the universal concept of Productivity (output/input) as it is easier to process for human minds, which usually struggles with metrics with many decimals.

## Discussion

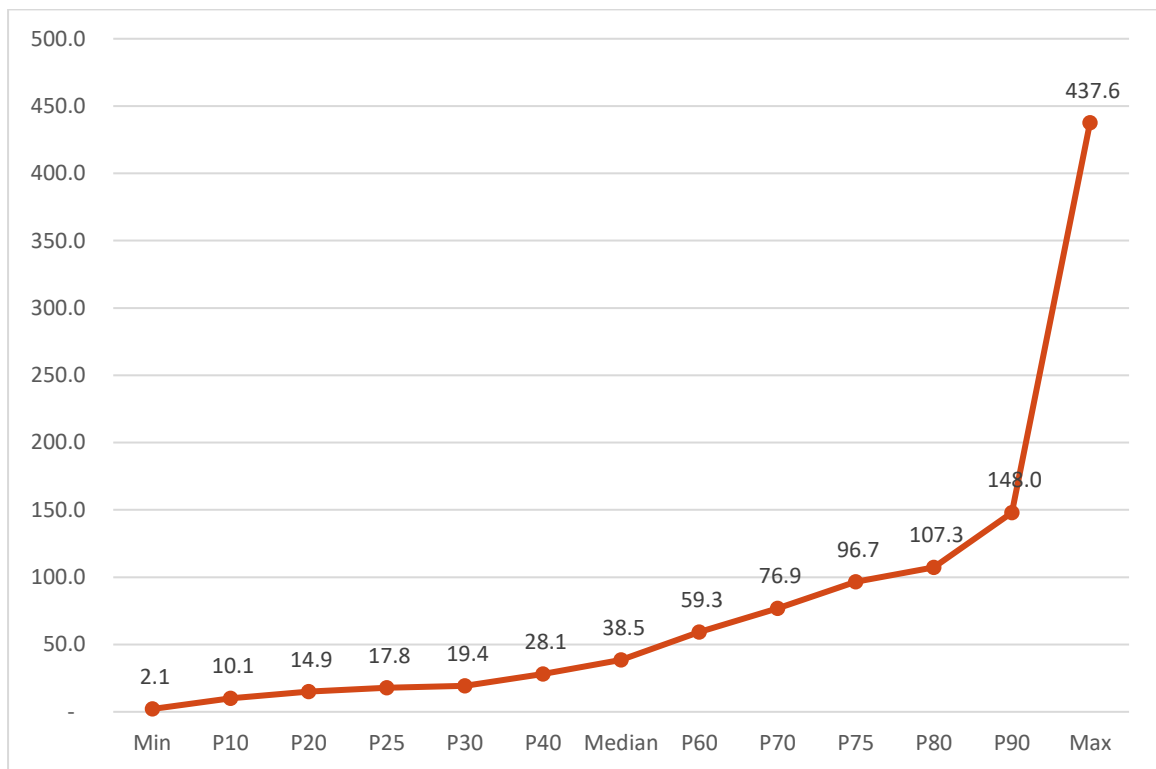
In this short paper, we take a closer look at the data-warehouse projects that are in the ISBSG repository. In total, 152 projects have been submitted, 3 of them being quite old (before 2000). In the most recent time period, between 2016 and 2020, 109 projects were submitted, that are data warehouse and/or BI related. If we take closer look at these 109 projects, it becomes clear that most of these projects are carried out quite productively. The PDR distribution is shown in the next figure.



**Figure 1: PDR of the DWH and BI projects in the 2021 D&E Repository**

We see that the median is 6.3 hours per FP, which means that half of the data points has a PDR of 6.3 hours per FP or better.

However, the speed of delivery does not indicate that these types of projects are delivered so fast. In the next figure the distribution is given.



**Figure 2: Delivery Speed of the DWH and BI projects in the 2021 D&E Repository**

A median Delivery Speed (FP per month) of 38.5 is very low compared to other types of projects. So it seems that even when productivity of these type of projects is high, delivery speed seems to be low. This could indicate that teams are typically small, which enables them to be very productive, but because of the small size they are not able to produce many FP per month.

If you wish to do your own analysis, or if you are interested to use the ISBSG data for Cost estimation, benchmarking, performance measurement, procurement, etc., please subscribe to the data here: <https://www.isbsg.org/project-data/>

## The International Software Benchmarking Standards Group (ISBSG)

The ISBSG is a not-for-profit organization founded in 1997 by a group of national software metrics associations. Their aim was to promote the use of IT industry data to improve software processes and products.

ISBSG is an independent international organization that collects and provides industry data of software development projects and maintenance & support activities in order to help all organizations (commercial and government, suppliers and customers) in the software industry to understand and to improve their performance and decision making. ISBSG sets the standards of software data collection, software data analysis and software project benchmarking processes and is considered to be the international thought leader in these practices.

**The ISBSG mission is to support commercial and public organizations to improve the estimation, planning, control and management of IT software projects and/or maintenance and support contracts.**

To achieve this:

ISBSG maintains and grows 2 repositories of IT software development/maintenance & support data. This data originates from trusted, international IT organizations and can be obtained for a modest fee from the website [www.isbsg.org/project-data/](http://www.isbsg.org/project-data/)

### *Help us to collect data*

ISBSG is always looking for new data. In return for your data submission, we issue a free benchmark report that shows the performance in your project or contract against relevant industry peers.

Please submit your data through one of the forms listed on <http://isbsg.org/submit-data/>

**A specific Agile/Scrum data collections questionnaire can be downloaded here:**

<https://cutt.ly/4vnuXVT>

### *Partners*

This page will help you to find an ISBSG partner in your country:

<http://isbsg.org/meet-isbsg-partners/>