ISBSG
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The global and independent source of data and analysis for the IT industry

Short paper

Analysis of Project Cost per Function Point

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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. These methods include Nesma, IFPUG and COSMIC function point counting.

Typical key metrics based on function points are:

- Project Delivery Rate (PDR)[1]: Hours spent per function point
- Cost efficiency: Cost (or Price) per function point
- Quality: Defects per function point (in test and/or 1st 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 the IT industry, the trend is for governments and other organizations to select vendors in a more output-based manner. 'Cost per Function Point' is an industry best-practice to ensure that both the customer and the supplier benefit from high productivity. However, it is important to make sure that the Cost per Function Point is realistic. In this short paper, we analyze projects in the ISBSG Repository, for which

[1] 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.

the following data has been submitted: project cost and functional size of the application developed.

Dataset selection

For this analysis have selected the following dataset: projects measured using the IFPUG or Nesma size measurement methods, data quality rating A or B, Project year after 2015, Project Cost not blank and currency of European Euro. The number of projects (i.e. data points) selected is 898.

Analysis results

The distribution of the cost of these 898 data points is shown in Figure 1.

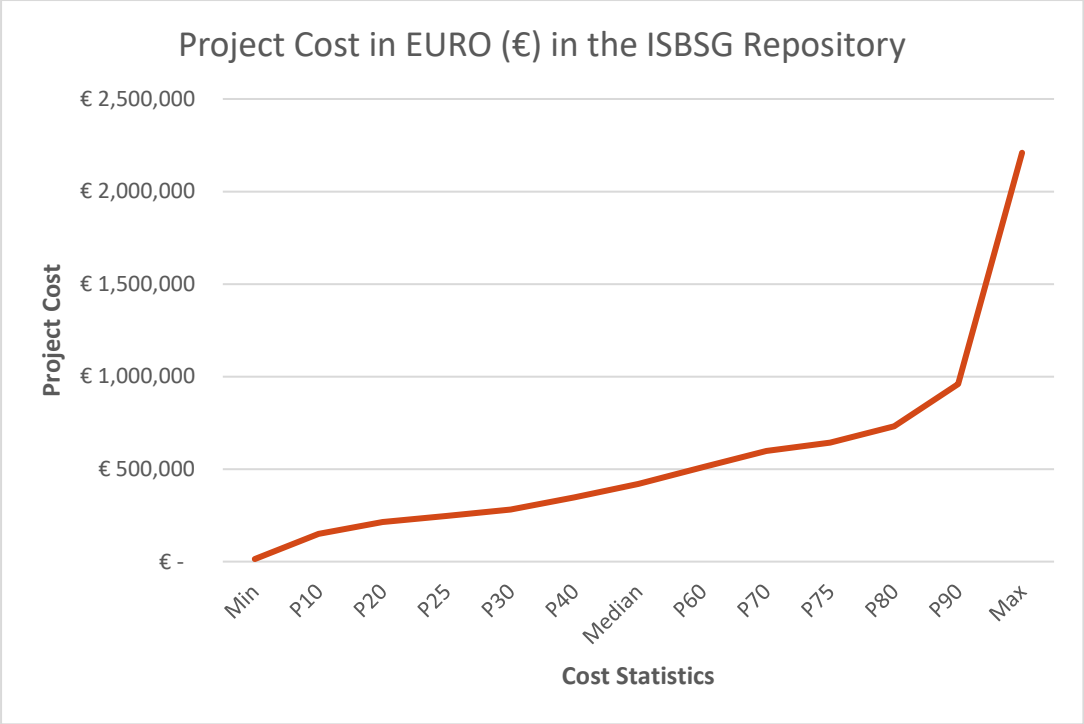

Figure 1: Distribution of Project Cost in European Euro in the ISBSG D&E repository.

Approximately 90% of the projects are cheaper than 1 million Euro. The median cost is approximately half of this amount.

In Figure 2, the Cost per Function Point is shown per size category for a number of percentiles between P25 and P75, including the Median which can be considered the market average for the data set.

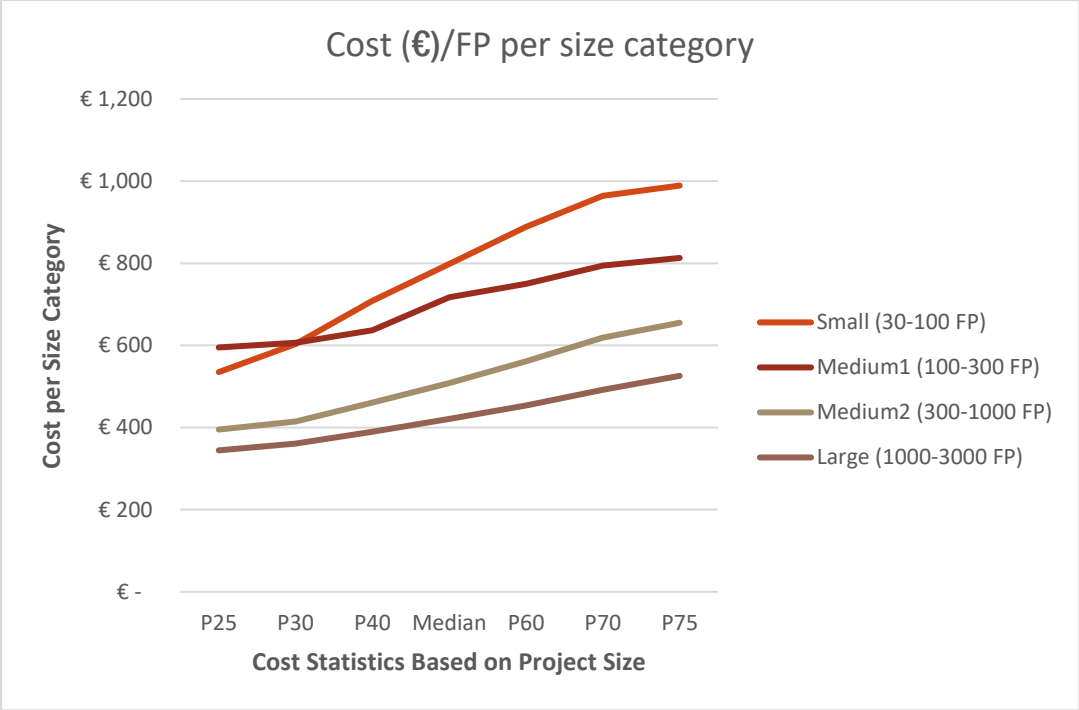

Figure 2: The distribution of Cost/FP per size category in projects measured in Nesma/IFPUG

Like in other ISBSG studies, there appears to be a relationship between the functional size and the Cost per Function Point - the larger the project size, the lower the Cost per Function Point. In theory, the activities that have to be carried out, regardless of project size, have a lower influence on the Cost per Function Point when projects get larger.

Conclusions

This high-level analysis of Cost per Function Point shows that apparently it is more cost effective to carry out larger projects as these deliver functionalities with a lower Cost per Function Point than smaller projects.

Other factors, such as the programming language, also have a big impact on the reality value of the Cost per Function Point of a project. 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/

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:
https://www.isbsg.org/board/