ISBSG
Delivering IT Confidence

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

Short paper

Use Case:

Winning A large Price-per-FP contract

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Introduction

The ISBSG repository contains a vast array of project data. It includes data for projects undertaken in an agile way of working. This enables analysis of the differences between traditional projects and agile projects.

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)[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)
- Delivery Speed: Function points delivered per calendar month.

The ISBSG 'New Development & Enhancement' repository contains thousands of completed projects for which these metrics are calculated. This allows organizations to make better decisions based on facts instead of opinions.

In this short report we investigate a Price-per-Function-Point contract. Within this scenario, a consultancy firm helped a large IT Services provider to win a large European government Price-per-FP contract using ISBSG data.

[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

Description

A competitive, public tender was issued by a prominent European regulatory agency for the development of a modern business intelligence (BI) solution. Pricing was structured around a fixed price-per-function point (FP) to ensure transparent cost alignment with delivered functionality. A large, international IT services provider, leveraging its global delivery model with primarily India-based development teams, engaged a specialized consultancy firm to derive an optimal price-per-FP bid.

The consultancy drew upon ISBSG's extensive dataset of over 11,000 completed projects. It analyzed market-average productivity rates for comparable BI implementations in similar technical environments (e.g., data warehousing tools, ETL processes, and dashboarding frameworks). The rates were benchmarked using localized, hourly costs for Indian IT professionals, factoring in salary benchmarks, overheads, and efficiency adjustments. The firm constructed a highly competitive price-per-FP that balanced profitability with aggressiveness. This data-driven approach enabled the provider to outmanoeuvre 20 rival bidders. It secured the contract and demonstrated the strategic value of ISBSG benchmarks in fixed-price functional sizing competitions.

Problem Statement

The European regulatory agency required a fixed price-per-function-point (FP) bidding model. This was to ensure cost predictability and alignment with delivered business value in the development of a new enterprise-wide, business intelligence (BI) solution. There were 21 competing consultancies and system integrators—many leveraging diverse global delivery models. The challenge was to derive a price-per-FP that was simultaneously aggressive enough to win the tender, sustainable for long-term profitability, and defensible under scrutiny.

Traditional estimation approaches based on internal historical data risked either overpricing (and losing the bid) or underpricing (and eroding margins). This was an important consideration, given the use of an India-based delivery centre with significantly lower labour rates than European norms. Without access to reliable, industry-benchmarked, productivity metrics for BI projects in comparable technical environments, the bidding firm faced substantial uncertainty in translating local resource costs into a competitive yet realistic FP rate.

Process: Deriving the Winning Price-per-FP Using ISBSG Data

1. **Scope Alignment and FP Counting Rules Definition**
   Collaborated with the client's procurement team to adopt the agency's approved function point counting practices (aligned with IFPUG and Nesma). Defined the BI solution boundary, identified data functions (ILFs/EOs), transactional functions (EIs/EQs), and established a baseline unadjusted FP count for the tender scope.

2. **ISBSG Repository Query and Filtering**
   Accessed the ISBSG Development & Enhancement Repository (Release 2024, >11,000 projects). Applied filters to isolate BI/data warehouse projects:
   - Primary language: 4GL/SQL
   - Application Type: BI / Data warehouse
   - Effort breakdown: ≥60% in design, build, test
   - Size range: X and XL
   - Normalized effort in person-hours
     Result: 187 comparable projects.

   Productivity Benchmark Calculation
   Computed the median and 25th/75th percentile productivity rates, excluding outliers (>3σ) and projects with >20% missing data.
   - P25 (aggressive): 9.8 hours per FP
   - Median: 12.3 hours per FP
   - P75 (conservative): 15.1 hours per FP

3. **Local Resource Rate Modelling (India Delivery Centre)**
   Built a fully loaded hourly rate model using current Indian market data:
   - Base salary (mid-senior BI developer): ₹18–22 lakhs p.a.
   - Overhead (infrastructure, management, G&A): 42%
   - Utilization rate: 82%
   - Resulting blended rate: $22.40 (USD) per hour (converted at ₹83/USD).

4. **Price-per-FP Construction**
   Applied the aggressive P25 productivity benchmark to the local rate:
   9.8 hours/FP × $22.40/hour = $219.52 (USD) per FP.
   Added 12% contingency and 18% target margin → $252 (USD) per FP (rounded for bid submission).

5. **Sensitivity and Risk Validation**
   Ran Monte Carlo simulations (1,000 iterations) varying productivity (±15%) and FX rates (±5%). Confirmed >92% probability of achieving ≥15% margin at

$252(USD)/FP. Stress-tested against European on-site rate equivalents ($950 (USD)/FP) to validate competitiveness.

6. **Bid Submission and Win**
   Submitted $252 (USD)/FP as the fixed rate for the entire scope. Outpriced 20 competitors (average rival bid ~$380 (USD)/FP) while remaining within the agency's confidentiality ceiling. Contract awarded!

Conclusions

By anchoring the bid to ISBSG's empirically validated productivity benchmarks and aligning them with the cost structure of an India-based delivery centre, the consultancy delivered a winning price-per-FP of $252 (USD). This was more than 30% below the competitor average — while safeguarding a target margin of 18%. The contract award to the international IT services provider among 21 bidders underscores the decisive advantage of data-driven estimation in fixed-price functional tenders.

This case demonstrates that ISBSG data, when systematically filtered and combined with localized resource economics, transforms speculative pricing into a repeatable, defensible strategy that balances competitiveness, profitability, and delivery confidence in high-stakes public BI procurements.

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/data-subscription-2/

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 maintains industry data for software development projects and maintenance & support activities. This is 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. It is an international 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 and maintenance & support data. This data originates from trusted, international IT organizations and can be obtained for a modest fee from the website https://www.isbsg.org/data-subscription-2/

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

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This page will help you to find an ISBSG partner in your country: https://www.isbsg.org/board/