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Short paper

The Product Owner's Guide to Predictability: Leveraging Functional Size and ISBSG Data

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Introduction

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

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'll dive into the benefits of using functional size and standardized metrics based on ISBSG data, especially for Product owners.

Discussion

In the current world of agile software development, the **Product Owner** is often caught between the pressure for rapid feature rollout and the need for realistic, data-backed forecasting. Relying on "gut feelings" or inconsistent team-specific metrics like story points makes it nearly impossible to communicate value or manage stakeholder expectations across a broader portfolio. By adopting **standardized functional size measurement (FSM), e.g., Nesma, IFPUG or COSMIC function points,** in tandem with **ISBSG benchmark data**, Product Owners can finally speak a universal language of scope and performance. This combination transforms the role from managing "tasks" to managing "functional value."

[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

What does a Product Owner do?

In an agile team, the Product Owner serves as the pivotal voice of the customer and stakeholders, bridging business needs with technical execution to maximize product value. The core responsibilities include:

- owning and prioritizing the product backlog to ensure it aligns with strategic goals
- clearly defining user stories and acceptance criteria for the development team
- making decisive trade-offs on features based on market feedback, ROI potential, and evolving requirements

Additionally, Product Owners collaborate closely with the team during sprint planning and reviews. They refine deliverables, accept or reject completed work to maintain quality standards, and continuously groom the backlog to adapt to changes without disrupting flow. This role demands strong communication skills, domain expertise, and a focus on outcomes over outputs. This enables the team to deliver incremental value efficiently while mitigating risks associated with subjective priorities.

Why does the Product Owner need Functional Size?

In agile environments, Product Owners usually rely on story points and story point velocity to prioritize the backlog, plan sprints, and forecast short-term delivery. While these relative measures work well for team-internal commitment and sprint planning, they fall short when the Product Owner needs to communicate scope, progress, and value delivery in objective, business-relevant terms to stakeholders, management, or external partners.

Functional Size Measurement (FSM) is typically expressed in function points or similar standardized units. It quantifies functional user requirements, delivered in a consistent, verifiable, and repeatable way. It is independent of technology, implementation details, or team estimation biases. FSM is an objective size metric that serves as the strongest proxy for business value delivered: more functional size generally corresponds to more functionality and therefore greater potential value to the organization.

By combining functional size with effort, duration, and cost data, the Product Owner can calculate and track meaningful KPIs such as delivery speed (functional size per time period), value delivered (functional size per budget spent), cost efficiency, and

overall productivity. These metrics enable evidence-based discussions about long-term road mapping, realistic release forecasting, budget justification, and performance benchmarking.

The ISBSG (International Software Benchmarking Standards Group) repository plays a crucial role by providing industry-wide reference data from thousands of completed projects. Product Owners can use ISBSG benchmarks to set realistic expectations and compare their product's delivery performance against similar projects (by industry, domain, or team size). They can identify improvement opportunities, and make defensible arguments for resourcing, prioritization, or supplier contracts (e.g., moving from time & material to value-based pricing per functional unit).

Ultimately, functional size measurement — supported by ISBSG data — empowers the Product Owner to shift from purely subjective prioritization to objective value management, ensuring better alignment between development output and strategic business goals.

Benefits for Product Owners

Using an ISO-compliant yardstick allows for an objective assessment of what is being delivered, while the ISBSG repository provides the historical context to predict how long that delivery should take and what it should cost. This report outlines how a Product Owner can use these standardized metrics to:

- **Strategically Backlog Prioritization Based on Functional Value:** Product Owners can objectively identify "quick wins" where high business value aligns with low functional complexity.
- **Validate Roadmaps:** Use industry-proven delivery rates to ensure release plans are grounded in reality rather than optimism.
- **Negotiate Scope with Data:** Move from subjective debates to objective discussions by quantifying the functional impact of new requirements.
- **Benchmark Vendor Performance:** Evaluate external development partners against global productivity standards to ensure maximum value for every functional unit delivered.
- **Drive Budget Transparency:** Provide executive leadership with defensible, size-based cost estimates that reduce financial risk.

Validate Roadmaps

To validate a roadmap effectively, a Product Owner must move beyond the "velocity" of a single team—which is often subjective and volatile—and instead anchor their release plan in standardized functional size.

By quantifying the backlog using one of the standards of functional size measurement, the Product Owner establishes a fixed unit of value (the Functional Size Unit) that can be directly compared against ISBSG benchmark data. This allows the Product Owner to apply industry-proven delivery rates—such as the PDR (Project Delivery Rate)—to their specific scope. Instead of hoping a team can "go faster," the roadmap is validated against thousands of similar completed projects, providing a reality check that highlights whether a release date is statistically achievable or merely an optimistic target.

Negotiate Scope with Data

By quantifying the backlog through standardized functional size measurement (FSM), a Product Owner moves the negotiation from subjective opinions to objective, ISO-compliant data. Instead of debating the "complexity" of a feature, the discussion shifts to its functional footprint.

This rigorous approach allows the Product Owner to demonstrate the "cost of change" by using ISBSG benchmark data to show exactly how adding a specific functional unit correlates with an increase in effort and a potential shift in the delivery date. Grounding the conversation in a universal metric prevents "scope creep" from being a matter of willpower. It transforms it into a transparent trade-off. Every addition to the functional size is balanced against the available capacity and budget. This ensures that stakeholders understand the direct impact of their requests on the project's trajectory.

Benchmark Vendor Performance

Integrating standardized functional size measurement (FSM) into vendor management transforms the "black box" of outsourced development into a transparent, performance-driven partnership. By requiring vendors to report progress in function points, Product Owners can establish objective Service Level Agreements (SLAs) based on industry standards.

Using the ISBSG Repository, organizations can compare a vendor's Project Delivery Rate (PDR), cost efficiency, and defect density against global peer groups. This data-driven benchmarking ensures that the organization is not overpaying for low-productivity output. It provides the necessary leverage to hold vendors accountable to market-competitive standards of speed and quality.

Drive Budget Transparency

Standardized functional size measurement (FSM) serves as the ultimate bridge between technical delivery and financial accountability. By converting abstract software requirements into a measurable count of functional size, Product Owners can generate defensible, unit-based cost estimates. When these measurements are mapped against ISBSG benchmark data, the resulting budget is no longer a "best guess" but a statistically grounded forecast based on thousands of completed

industry projects. This transparency allows the Product Owner to present executive leadership with a clear cost-per-functional-unit, making it easy to justify funding requests or explain how changes in scope directly impact the bottom line. It shifts the financial conversation from "Why does this cost so much?" to "Here is the industry-standard investment required to deliver this specific functional value."

Strategic Backlog Prioritization Based on Functional Value

Standardized functional size measurement (FSM) provides the Product Owner with an objective denominator to calculate the true Return on Investment (ROI) of every backlog item. By understanding the value of each feature (measured in function points), the Product Owner can move beyond simple "High/Medium/Low" priority labels and instead calculate a Value-to-Size ratio. When combined with ISBSG benchmark data, this allows for a sophisticated "Value-for-Money" analysis. It compares the anticipated business value against the industry-standard effort required to deliver that specific functional size. This data-driven prioritization ensures that the team focuses on high-impact, low-complexity "quick wins" first, while identifying and deferring features that offer marginal functional value relative to their high delivery cost.

And there are many more advantages of using objective and standardized size measurement and team performance metrics over subjective team-specific relative guestimates of effort like Story Points!

Conclusions

The integration of **standardized functional size measurement (FSM)** with **ISBSG benchmark data** provides the Product Owner with a powerful, evidence-based framework to navigate the complexities of software delivery. By moving away from subjective estimation and adopting a universal language, organizations can achieve a level of transparency and predictability previously out of reach.

This synergy does more than just improve accuracy; it transforms the Product Owner into a data-driven strategist capable of validating roadmaps, negotiating scope, and benchmarking vendor performance with global authority. Ultimately, leveraging these standardized metrics ensures that every investment is optimized for maximum functional value, grounding project success in industry reality rather than optimistic projections.

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 for software development projects and maintenance & support activities. It aims 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 thought 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

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