



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

CORPORATE PRESENTATION



THE INTERNATIONAL SOFTWARE BENCHMARKING STANDARDS GROUP

ISBSG

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About the ISBSG

ISBSG – THE STORY SO FAR

- ISBSG (International Software Benchmarking Standards Group) is a **not-for-profit organization**.
- The ISBSG was founded in Australia 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.
- Today ISBSG has partners from a variety of metrics associations and private corporations. Clients from around the world use our **project data, reports and estimation tool** to improve the planning of their software projects. We also provide resources to universities and academics.

NON PROFIT



ISBSG MISSION

Mission: “**To improve the management of IT resources** by both business and government, through the provision and exploitation of **public repositories of software engineering knowledge** that are standardized, verified, recent and representative of current technologies”

All ISBSG data is

- validated and rated in accordance with its quality guidelines
- representative of the industry
- independent and trusted
- captured from a range of organization sizes and industries
- Anonymously stored in the repositories



“Without data you’re just another person with an opinion”

- W. Edwards Deming

ISBSG GOLD PARTNERS (2019/2020)

China

- SPI China - China System and Software Process Improvement Association
- Kexin - Beijing Kexin Science and Technology Ltd

Finland

FiSMA - Finnish Software Measurement Association

Italy

GUFPI-ISMA - Italian Software Metrics Association

Japan

JFPUG – Japanese Function Point User Group

Mexico

AMMS (Mexican Association of Software Metrics)

Netherlands

Nesma – Software Cost Estimation and Functional Size standard

Spain

Leda-MC – Consultancy company

USA

- Galorath – Cost Estimation Software
- IFPUG – International Function Point User Group

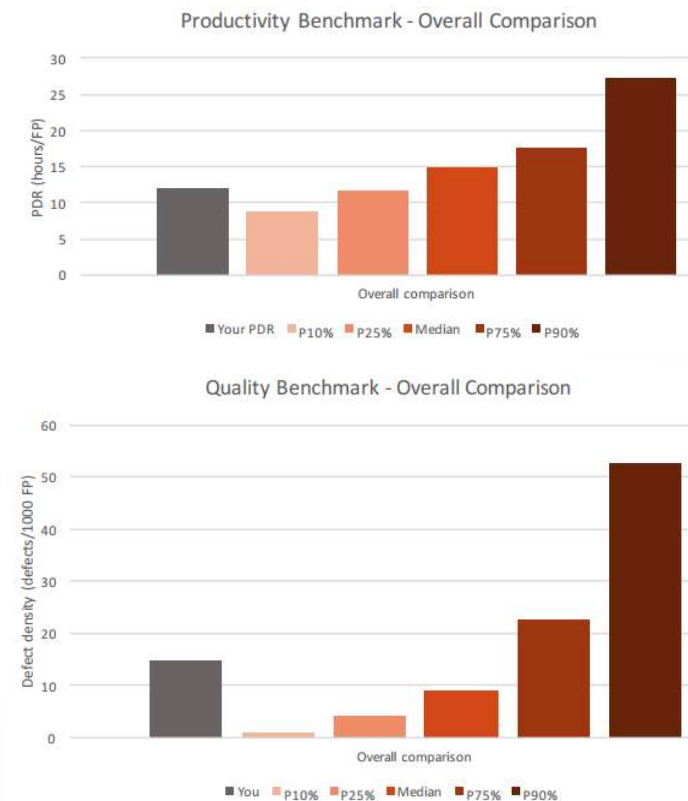
INTERNATIONAL SOFTWARE BENCHMARKING STANDARDS GROUP (ISBSG)

Grows and exploits two repositories of software data:

- New development projects and enhancements (**R2021: > 10600 projects, releases and sprints**)
- Maintenance and support (**R2020: > 1177 applications**)

Everybody can **submit** project data

- Questionnaires on the site, online or Excel data files
- Anonymous
- **Free benchmark report in return**





Data and Practical examples

ISBSG REPOSITORY DATA


Data is submitted to the ISBSG from many different IT and metrics organizations. These organizations have an interest in benchmarking, themselves, or wish to support the world's only "open" repositories of IT project data.

The ISBSG software metrics data can be used to assist you with:

- Estimation
- Benchmarking
- Project management
- Bid support
- Outsourcing management
- Standards compliance
- Budget support



ISBSG DATA

																	
D&E Corporate Release April 2019	9178 rows																
ISBSG Project ID	Rating	Rating	Software Age	Major Grouping	Major Grouping	Major Grouping	Major Grouping	Major Grouping	Major Grouping	Major Grouping	Major Grouping	Major Grouping	Sizing	Effort	Productivity	Productivity	
	Data Quality Rating	UFP rating	Year of Project	Industry Sector	Organisation Type	Application Group	Application Type	Development Type	Development Platform	Language Type	Primary Programming Language	Count Approach	Functional Size	Normalised Work Effort Level 1	Normalised Level 1 PDR (ufp)	Normalised PDR (ufp)	
10007	B	B	2016	Communication	Telecommunications;	Business Application	Customer relationship management;	Enhancement			Java	IFPUG 4+	51	314	6.2	6.2	
10046	B	B	2015	Communication	Telecommunications;	Business Application	Customer relationship management;	Enhancement	Multi	3GL	Java	IFPUG 4+	63	888	14.1	14.1	
10109	B	B	2015	Insurance	Insurance;	Business Application	Workflow support & management;	New Development	PC	4GL	.Net	NESMA	317	3735	11.8	11.8	
10169	B	B	2015	Insurance	Insurance;	Business Application	Workflow support & management;	Enhancement	PC	4GL	Oracle	NESMA	168	137	0.8	0.8	
10293	B	B	2016	Utilities	General;	Business Application		Enhancement		4GL	.Net	NESMA	32	1318	41.2	41.2	
10305	B	B	2015	Communication	Telecommunications;	Business Application	Customer relationship management;	Enhancement	Multi	3GL	Java	IFPUG 4+	110	1037	9.4	9.4	
10313	B	B	2015	Insurance	Insurance;	Business Application	Workflow support & management;	Enhancement	PC	3GL	COBOL	NESMA	402	1073	2.7	2.7	
10317	B	B	2015	Government	Government;	Business Application	Business Application;	Enhancement		4GL	.Net	NESMA	8	816	102	102	
10392	B	B	2016	Communication	Telecommunications;	Business Application	Customer relationship management;	Enhancement			Java	IFPUG 4+	132	1037	7.9	7.9	
10421	B	B	2016	Communication	Telecommunications;	Business Application	Other;	Enhancement		4GL	.Net	IFPUG 4+	74	1229	16.6	16.6	
10469	B	B	2015	Communication	Telecommunications;	Business Application	Stock control & order processing;	Enhancement	Multi	3GL	Java	IFPUG 4+	85	357	4.2	4.2	
10473	B	B	2015	Insurance	Insurance;	Business Application	Workflow support & management;	Enhancement	PC	3GL	COBOL	NESMA	56	295	5.3	5.3	
10521	B	B	2014	Communication	Telecommunications;	Business Application	Stock control & order processing;	Enhancement	Multi	3GL	Java	IFPUG 4+	135	2424	18	18	
10546	B	B	2016	Communication	Telecommunications;	Business Application	Customer relationship management;	Enhancement			Java	IFPUG 4+	86	523	6.1	6.1	
10565	B	B	2016	Insurance	Insurance;	Business Application		Enhancement		3GL	PL/SQL	IFPUG 4+	87	251	2.9	2.9	
10572	B	B	2014	Government	Government;	Business Application	Business Application;	Enhancement		4GL	Oracle	NESMA	85	774	9.1	9.1	
10600	B	B	2015	Government	Government;	Onshore		Enhancement		4GL	Oracle	NESMA	54	608	11.3	11.3	
10655	A	B	2014	Government	Government;	Onshore		Enhancement		4GL	.Net	NESMA	16	706	44.1	44.1	
10658	B	B	2014	Insurance	Insurance;	Business Application	Unknown;	Enhancement		3GL	PL/SQL	IFPUG 4+	71	117	1.6	1.6	
10665	B	B	2015	Communication	Telecommunications;	Business Application	Stock control & order processing;	Enhancement	Multi	3GL	Java	IFPUG 4+	96	1599	16.7	16.7	
10707	B	B	2014	Communication	Telecommunications;	Business Application	Stock control & order processing;	Enhancement	Multi	3GL	Java	IFPUG 4+	56	1298	23.2	23.2	
10762	B	B	2015	Communication	Telecommunications;	Business Application	Customer relationship management;	Enhancement	Multi	3GL	Java	IFPUG 4+	231	224	1	1	
10776	A	B	2015	Government	Other;	Business Application		Enhancement		3GL	Java	NESMA	706	8276	11.7	11.7	
10834	A	B	2016	Government	General;	Business Application		Migration		3GL	Java	NESMA	167	2643	15.8	15.8	
10909	C	C	2015					New Development		3GL	Java	Gartner FFP	209	1438	6.9	6.9	
10940	B	B	2015	Insurance	Insurance;	Business Application	Workflow support & management;	Enhancement	PC	3GL	Java	NESMA	246	5147	20.9	20.9	
11014	B	B	2016	Communication	Telecommunications;	Business Application	Customer relationship management;	Enhancement		3GL	Java	IFPUG 4+	66	967	14.7	14.7	
11118	B	B	2015	Communication	Telecommunications;	Business Application	Logistic or supply planning & control;	Enhancement	Multi	3GL	Java	IFPUG 4+	96	920	9.6	9.6	
11182	B	B	2014	Insurance	Insurance;	Business Application	Unknown;	Enhancement		4GL	Oracle	IFPUG 4+	58	55	0.9	0.9	
11195	B	B	2014	Manufacturing				New Development		3GL	Java	IFPUG 4+	51	818	16	16	

- The data sample above shows that every project, release or sprint is a row in the Excel spreadsheet.
- There are 253 columns, each a data attribute. However, not all data attributes have been submitted.
- The Data Quality Rating and UFP rating (for functional size) are given by the ISBSG repository manager.

ESTIMATION EXAMPLE

Projects/releases/sprints satisfying the following criteria are selected from the ISBSG Data:

Data Quality: A or B

Year of Project > 2012

Project Type: Enhancement

Primary Programming language: Java

Count approach: Nesma or IFPUG

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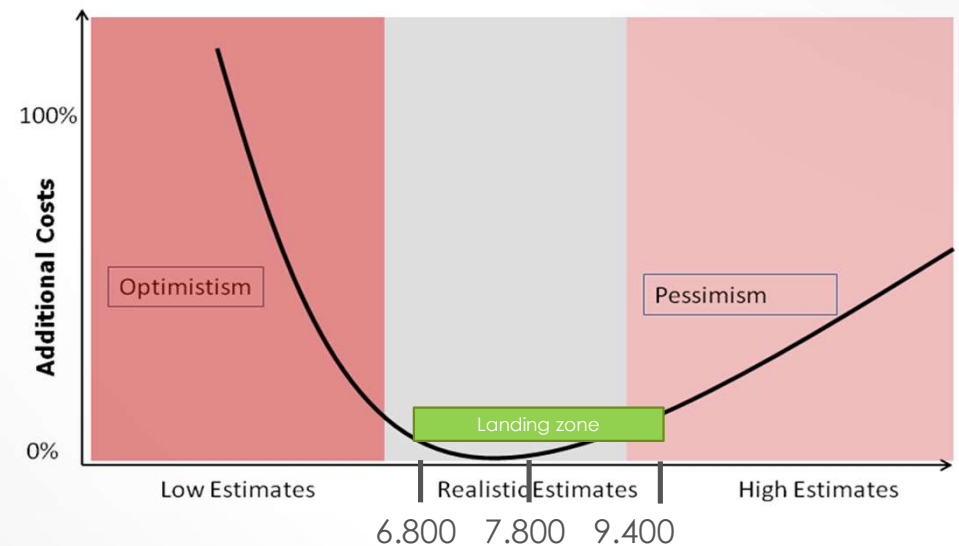
Example: 1000 FP project

Min: $6.8 * 1000 = 6,800$ hours

Likely: $7.8 * 1000 = 7,800$ hours

Max: $9.4 * 1000 = 9,400$ hours

	PDR (hours/FP)
Number of projects	166
Minimum	4.2
Percentile 10%	5.3
Percentile 25%	6.8
Median	7.8
Percentile 75%	9.4
Percentile 90%	10.2
Maximum	15.3
Average	7.9



BENCHMARKING EXAMPLE

A new Development project was carried out using the traditional waterfall approach by an internal team of a bank. It is a business application. The project size was 850 function points (Nesma/IFPUG)

The technology was Java and the effort spent:

- Design: 1110 hours
- Build: 4210 hours
- Test 1530 hours
- Implementation: 230 hours
- The total number of effort hours is 7080 hours.

1. Normalize for missing phases: Plan and Specify (18.6%). Total lifecycle effort is 8698 hours
2. Calculate the PDR: $8698 / 850 = 10.2$ hours per FP
3. Select a relevant peer group in the ISBSG repository: 14 projects selected
4. Determine the benchmark result. 10.2 lies between the P75 and P90, so the project's productivity is worse than the market average.

Statistic	Value
N	14
Min	1.1
P10	2.2
P25	2.6
Median	3.6
P75	6.2
P90	13.6
Max	24.7
Average	6.3



The subscriptions

4 SUBSCRIPTIONS

ISBSG offers 4 different subscriptions:

- Corporate subscription
- Project Data subscription
- Report subscription
- Productivity Query Tool (PDQ) subscription



CORPORATE DATA SUBSCRIPTION

Reasons Why You Should Consider an ISBSG Corporate Subscription

ISBSG Corporate Data Subscribers receive:

1. an Excel spreadsheet containing data for all projects from the ISBSG Development & Enhancement Repository
2. an Excel spreadsheet containing data for all applications from the ISBSG Maintenance & Support Repository
3. free updates of the Development & Enhancement Repository and Maintenance & Support Repository, as they occur
4. Demographic reports for the Development & Enhancement data and Maintenance & Support data.
5. unlimited access to all ISBSG Special Analysis reports
6. a report of your choice – you nominate the topic
7. a 12 month subscription to the new ISBSG Productivity Data Query tool
8. 10% discount on all ISBSG products and services

Price:

\$7,500 for a license for 1-9 users.

\$10,000 for a license for 10-49 users.

(All licenses are valid for 12 months. All prices are in Australian dollars).

- [Download and read the Corporate Subscription Licence Agreement](#)

PROJECT DATA SUBSCRIPTION

Reasons Why You Should Consider an ISBSG Data Subscription

ISBSG Data Subscribers receive:

1. an Excel spreadsheet containing data for all projects from the ISBSG Development & Enhancement Repository
2. an Excel spreadsheet containing data for all applications from the ISBSG Maintenance & Support Repository

Use the ISBSG project data to improve your:

- Planning
- Estimation
- Benchmarking
- Outsourcing management
- Standards compliance
- Budget support

THE REPOSITORIES

Development & Enhancement Data

Well-respected organisations from around the world have contributed their software project data to the Development & Enhancement (D&E) Repository.

Some quick facts about the D&E Repository:

- Consists of 10,600 software projects
- Projects developed in more than 32 different countries
- Wide variety of industry and business types represented

The data includes:

- Project description details
- Size and size attributes
- Effort and effort attributes
- Defects
- Project schedule details
- Effort per phase
- Architecture
- Techniques
- Documentation used
- Platform details

Maintenance & Support Repository

A varied range of organisations (including Outsourcing companies) have contributed their application data to the Maintenance & Support Repository. (Note: most recent data submission was 2012)

Some quick facts about the M&S Repository:

- Consists of 1,177 projects
- Projects from around the world
- Wide variety of industry and business types

The data Includes:

- Organisation description details
- Project description details
- Effort breakdown for Maintenance activities
- Effort breakdown for Support activities
- Effort per application size rates
- Defect counts
- Platform
- Hardware
- Programming Languages Used

REPORT SUBSCRIPTION

- Expand your knowledge on a range of relevant project topics.
- At ISBSG, our experts statistically analyse our project data to produce informative reports.
- Subscribe now and receive downloadable copies of the reports listed.
- The subscription price is \$250 (AUD).

Architecture

- ✚ Software Project Characteristics that Impact Development Productivity

Planning

- ✚ Early Lifecycle Software Estimation
- ✚ Planning Projects – Phase Effort Ratios
- ✚ Planning Projects - Role Effort Ratios
- ✚ Project Durations by Size and Effort
- ✚ Team Size Impact on Project Delivery Rate
- ✚ Software Project Costs
- ✚ Software Project Estimates - How Accurate Are They?
- ✚ The Use of Function Points in the Industry

Maintenance

- ✚ Managing Your Maintenance & Support Environment

Design Considerations

- ✚ Government & Non-Government Software Project Performance
- ✚ Outsourcing, Offshoring, Inhouse - How do they compare?
- ✚ Package Customisation - What to expect
- ✚ The Performance of Business Application, Real-Time & Component Software Projects
- ✚ Web Projects - How Different Are They?

Technical Design/Implementation

- ✚ Techniques & Tools Special Reprt

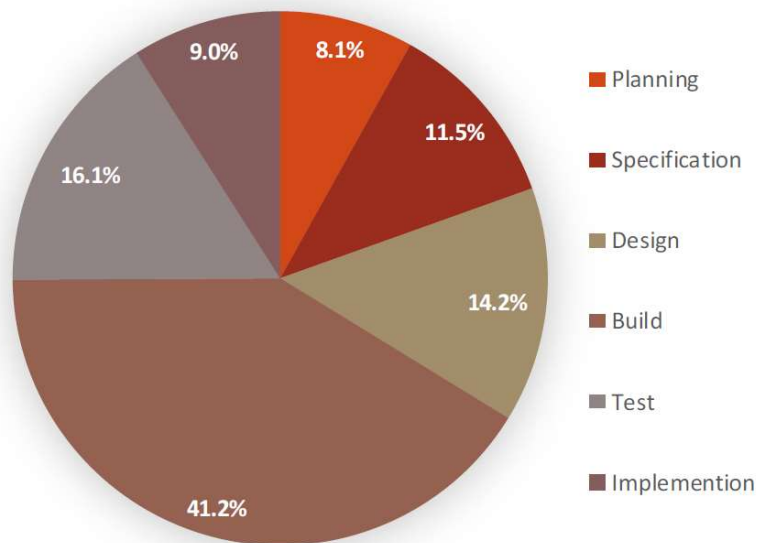
Benchmarking

- ✚ Software Industry Performance (SIP) Report
- ✚ Software Development Performance by Country

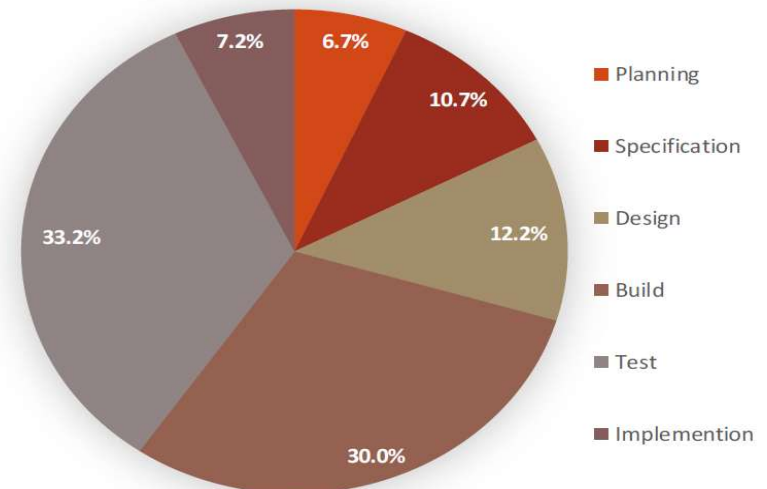
SPECIAL ANALYSIS REPORTS

- Example: Planning Projects: Effort Phase Ratios

Project Phase Ratios - New development



Project Phase Ratios - Enhancement



PRODUCTIVITY QUERY TOOL SUBSCRIPTION

- Making accurate project estimations can be both difficult and challenging. However, being able to precisely determine project duration, effort and delivery rate are essential for the success of your IT project.
- How would you like to benchmark your project estimates against similar projects from the IT industry? At your fingertips, in just a few minutes?
- View a [short video clip](#) demonstrating the use of the PDQ Too.

Check the accuracy of your project estimates



The ISBSG Development & Enhancement Repository contains project details for more than 9,100 software projects from around the world. Projects originate from a wide range of highly-respected IT and metrics organisations.



The Productivity Data Query Tool is interactive and simple to use. *Obtain project estimates within minutes!* Change project attribute combinations and re-generate statistics as many times as you wish.



The tool enables you to compare your project against similar projects from the ISBSG Repository. It searches the Repository for projects that match yours and displays the following estimates for them: *Project Delivery Rate, Speed of Delivery and Defect Density*.

It then calculates *Project Duration* and *Project Work Effort* estimates for your project.



Other resources

IT CONFIDENCE CONFERENCE

Since 2013, ISBSG has organised the annual IT Confidence Conferences in cooperation with its Gold partners.

This is a 1-day conference, aimed to restore confidence in IT projects by using historical industry project data.

The presentations from these conferences can be downloaded for free.

- The following IT Conference conferences are available:
 - 2013: Rio de Janeiro (Brazil)
 - 2014: Tokyo (Japan)
 - 2015: Florence (Italy)
 - 2016: Los Angeles (USA)
 - 2017: Beijing (China)
 - 2018: Mexico City (Mexico)
 - 2019: Beijing (China)
 - 2020: Online (Worldwide)

AGILE CORNER

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Agile Productivity Measurement

Agile software development empowers teams. It enables the product to be developed centrally instead of having a project-like focus. This has led to less control on a management level. [Read more](#)



Managing AGILE Activities

Agile enables development teams to bring major benefits to software customers. [Read more](#)

Would you like a free copy of: 'We prefer Facts not Stories – Managing Agile Activities Using Standardised Measures'?

[Download your free report](#)



Effort Estimation

This study examines the performance of estimation models built using Story Points and COSMIC Function Points.

Would you like a free copy of the Industry Case Study to find out?

[Download your free report](#)



Estimating AGILE Team Size

Would you like a free copy of 'How to Estimate the Required Team Size of Agile Teams'?

[Download your free report](#)



Productivity is Important

Productivity measurement and improvement is an important activity in most industries, often crucial for their survival. [Read more](#)



New Agile Data Collection Questionnaire

ISBSG has released a new data collection questionnaire specifically for Agile projects.

[Download the Agile Data Collection Questionnaire](#) and submit your projects. Your submission to the ISBSG will help others learn about the productivity of Agile projects.

TUTORIALS/GUIDES

- How to Estimate the required size of agile teams?
- Productivity Measurement of Software Projects
- Use case: Independent estimate / supplier proposal review
- Case study: Software project estimation at a large bank



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of data and analysis for the IT industry

THANKS FOR YOUR ATTENTION

WWW.ISBSG.ORG

