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Celebrating IFPUG's

30th

Anniversary

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IN THIS EDITION

We are excited to present you with this Anniversary edition of *Metric Views*. Join us in celebrating the 30th Anniversary of IFPUG and the International Year of Software Measurement (IYSM).

IFPUG takes pride in being at the forefront of functional measurement for the past 30 years. Our representation in the international community has grown significantly over the years. In celebration of our growing international community we have included insightful and informative articles from Brazil and Italy. Mauricio Aguiar discusses the business drivers that have made Brazil the number one function point user in the world and Roberto Meli advances the idea that the time is right for functional metrics to evolve towards simplification and agility.

To celebrate the International Year of Software Measurement, we have included articles that inform us of alternative functional measures that are being successfully used in addition to function points. Two alternative approaches to sizing, COSMIC and Nesma, are presented in this edition.

As a special treat we have included a recent interview with Capers Jones. Often referred to as a measurement ‘guru’, Capers is a well-known author and international public speaker. He has written numerous books on software measurement and function points.

Throughout this edition you will see various reflections from various IFPUG presidents. These men and women have given their time and talents to keep this vibrant users group relevant in today’s software industry.

A picture is worth a thousand words and throughout this edition you will see photos from past IFPUG conferences. We hope you enjoy this special edition of *Metric Views*. For you ‘old timers’, it will be trip down memory lane as you reminisce through the timeline of IFPUGs history. Enjoy



Message from the President

Tom Cagley

In 1986, Bill Huffschtmidt was elected the first president of IFPUG. Thirty years later, as I near the end of my second term as IFPUG President, I invite you to join us as we celebrate the 30th anniversary of the International Function Point Users Group. Function Points are an internationally standardized unit of measure used to represent software size. While this definition describes the basic idea which IFPUG is built upon, there would be no reason to celebrate if that was all. This year we celebrate thirty years of education, standards, and community in the realm of functional size and non-functional size measurement. The thirty years since the founding of IFPUG have been marked by invaluable growth and change.

The last two years serving as President have afforded me the opportunity to meet IFPUG members and supporters in Italy, Poland, and, most recently, India. I still believe that IFPUG has the most value when members are able to network with other members. This was no more evident than during our trip to Mumbai,

India for the ISMA¹³ conference this past March. The IFPUG Board of Directors and I received the warmest welcome from the Computer Society of India and it was clear that our Indian members were pleased we had traveled a great distance to be a part of their workshops and conference. Building these strong relationships are what keeps IFPUG a vibrant and relevant presence in the measurement community.

In 2017, we celebrate years of continued education through workshops and conferences, the evolution of the Software Non-Functional Assessment Process (SNAP) sizing standard, the advent of online CFPS and CSP exams with a new testing partner, and organizational growth and awareness brought about through interorganizational involvement and promotion. I would ask that each of you, as members, continue to grow IFPUG as we move on to our next chapter. Complete a volunteer form, and then reach out to the chairs of the committee or committees you are interested in becoming involved with. If you are not interested in joining a committee but have an idea that will help IFPUG grow please reach out to us at ifpug@ifpug.org.

On behalf of the IFPUG Board of Directors and Committee Members, I thank you for celebrating IFPUG's 30th Anniversary as we continue on the path of successful measurement practices.

Sincerely,

Tom Cagley
IFPUG President

From the Editor's Desk



Paul Radford

Thirty years of IFPUG is celebrated in this edition. This is a celebration both of what has been achieved and where IFPUG is at now.

IFPUG is an enduring symbol for and champion of software measurement. IFPUG standards are the most widely recognized and applied across the world. These achievements are substantial and have been the result of the contribution and co-operation of hundreds of people over thirty years. Certainly, this is a time to celebrate the work, the milestones and the people who have made this possible.

But it is also a time for reflection.

Where have we fallen short? What have we failed to do, to attempt or to achieve?

From a personal point of view, many of my hopes for IFPUG have not been realised. In the beginning, I thought the obvious issues with Counting Practices would be addressed and

resolved in a short period. From that basis, IFPUG could then address technological issues (as many estimating tools of the period were already doing). Then a true integration into early processes would enable better, cheaper software development and consequent high level management awareness.

None of those things have been achieved. Many of the obvious issues with Counting Practices are still there. And we have added some new ones. SNAP may be a way forward – but it is not as I anticipated and I have some of the same basic issues with SNAP fundamentals as with some of the more bizarre aspects of IFPUG defined function point analysis rules and guidelines.

But our biggest problem has always been that function point sizing is seen as a producer of a magic number, rather than an integral and enormously useful view of software. Extending this understanding to the world of software business and development is an enormously difficult task.

IFPUG has been a constant in software measurement for 30 years – and everything is not yet perfect. However, the task has been, and still is, formidable.

IFPUG is still here. And maybe this process was always going to be a lengthy one. It is where we start from NOW that matters. And how we plan to mould the future.

And the fact is that IFPUG has achieved an enormous amount.

David Herron put it best:

“..... Thirty years ago we did not have COSMIC, we did not have NESMA, we did not have SIFPA, etc. All those alternative measurement practices evolved from IFPUG directly or indirectly. Even though we advertised as being an international users group we certainly did not have the international presence 30 years ago that we have today. This is what I think we should be celebrating. A celebration of software measurement evolution for the greater good, which includes a diversity of measurement approaches and diversity of populations putting measurement practices to use.”

This is the spirit and future intention that has been forged over 30 years of steps and mis-steps. IFPUG most certainly has not always held these views. Maturity brings perspective and IFPUG, hopefully, has arrived at a significant milestone. Whether it can now forge a real plan and co-operation with others still lies in the future. And, as new centres of measurement inspiration arise – as they always do - new alliances and ways forward may be required. This has been a long and difficult path and much of it is still in front of us.

We need to start with a few big steps.

Paul Radford
Communications and Marketing Committee

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IFPUG 30 years – International Year of Software Measurement Timeline...

Compiled by Carol Dekkers, CFPS Fellow

- 1975** – Fred Brooks “*The Mythical Man-Month*”
- 1978** – Putnam <estimation> Model
- 1978** – Alan Albrecht presents FP concepts IBM Guide/Share conference
- 1981** – Barry Boehm “Software Engineering Economics”
- 1983** – Albrecht / Gaffney “Software Function, Source Lines of Code and Development Effort Prediction: A Software Science Validation”
- 1984** – IBM published AD/M Productivity Measurement and Estimation Validation
- 1985** – Charles Symons Mark II function point method¹
- 1986** – IFPUG founded with Bill Hufschmidt as President. 1st conference held in Toronto, Canada.
- 1986** – Capers Jones introduces Feature Points
- 1986** – French Function Point Users Group (now ASSEMI)
- 1987** – IFPUG bylaws, Westerville, OH
- 1987** – Chris Kemerer, MIT An Empirical Validation of Software Cost Estimation Models
- 1988** – ASMA Australian Software Metrics Association
- 1989** – IFPUG CPM 1.0
- 1989** – Netherlands Function Point Users Group (now NESMA)
- 1989** – Watts Humphrey Managing the Software Process
- 1989** – UK Function Point Users Group (now UKSMA)
- 1990** – CMP 3.0 was Released
- 1990** – GUFPI-ISMA (Gruppo Utenti Function Point Italia)
- 1990** – The Australian Software Metrics Association (ASMA)
- 1992** – Italian Government adopts FP governance
- 1992** – FiSMA (Finland)
- 1993** – 1st CFPS certification exam



- 1993** – DASMA (Germany)
- 1994** – CMP 4.0 was Released
- 1994** – JFPUG (Japan)
- 1995** – IFPUG formalizes ISO/IEC JTC1 SC7 standards work
- 1997** – The International Software Benchmarking Standards Group (ISBSG)
- 1997** – AEMES (Spain)
- 1998** – ISO/IEC 14143-1:1998 Functional Size Measurement – Definition of Concepts
- 1998** – Capers Jones “Sizing up Software” in December issue of Scientific American
- 1998** – The COSMIC consortium
- 1998** – Brazilian Function Point Users Group (BFPUG)
- 2000** – Garmus/Herron “Function Point Analysis; Measurement Practices for Successful Software Projects”
- 2002** – IFPUG publishes hardcover textbook “IT Measurement – Practical Advice from the Experts”
- 2002** – Australia adopts Southern Scope
- 2003** – ISO/IEC 20926 IFPUG Functional Size Measurement Method
- 2005** – Mauricio Aguiar of Brazil becomes 1st first non-North American IFPUG President
- 2005** – Certified Software Measurement Specialist (CSMS) certification
- 2006** – Northern SCOPE™
- 2007** – SNAP (Software Non-functional Assessment Process)
- 2008** – Brazilian Government directive “IN04”
- 2009** – CPM 4.3.1 was made available
- 2010** – IFPUG approved for the Japan Industrial Standard
- 2012** – “The IFPUG Guide to IT and Software Measurement”
- 2012** – POSMA (Poland) founded
- 2015** – AMMS (Asociación Mexicana de Métricas de Software)
- 2016** – Malaysian Government adopts FP governance
- 2017** – IEEE PAR working group for SNAP
- 2017** – IFPUG Celebrates 30 years and the International Year of Software Measurement!

¹Function Point Analysis: Difficulties and Improvements, C. R. Symons, IEEE Transactions on Software Engineering, 1985.



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Simple Function Points

by Roberto Meli

The functional size measurement is now more than 40 years old and has entered maturity and a relative stability. Unfortunately its usage is not yet spread as it “could” and “should” be in the market. The reasons are basically four: 1) the high level of knowledge and professionalism needed to master the most diffused methods; 2) the high level of requirements’ details and time needed to measure according to the standard rules and practices (described in quite big reference manuals); 3) the progressive uncoupling between the user’s functionalities provided by the development and maintenance projects (measured as “released FP”) and the software artefacts that must be worked - realized or modified - in order to deliver those functionalities; 4) the increasing importance of non-functional requirements in determining the final cost of a software project.

The third and fourth issues are not dependent on a specific Functional Size Measurement Method and may be faced using guidelines and new metrics. I will not deal with them in this article. The first and the second issues were at the origin of the definition of a new measurement method, derived from the IFPUG standard method and called Simple Function Points (SiFP).

Today there is a great attention to the “functional size approximation” subject in order to improve the acceptability of the methods to the technical community and to give an answer to the first two issues. This is of course important and I remember the high interest around the presentation of the Early & Quick Function Point technique at the IFPUG annual conference in Scottsdale (Arizona) in the far 1997! Unfortunately we do not only need an approximation method to be sustainable (low cost, easy to learn and use, early in the life cycle, using less documentation and requirements details) but the business community is seeking for a “measurement” method (with precise results) having those characteristics.

In fact, FPA calls for quite detailed descriptions of requirements, which are often not available in the early phases of development, when measures are needed for effort estimation. Even when detailed requirements are available, standard FPA involves a quite thorough analysis of requirements: this takes time, so that measures may not be available when needed.

The IFPUG method has been a positive revolution in the way in which to measure software and it has been a lighthouse in the darkness for at least 3 decades ! The evolutions in the versions of the method were significant till the 4.1 and then became “fine tuning” till now. The times are mature for an evolution in the direction of “simplification” and agility. As it happens very often it is very difficult to change direction when you have invested a lot in assets (specialists, certifications, tools, baselines etc.). Nevertheless we are in a business situation where “innovation” is a key success factor to stay alive and improve. There are two main assumptions that have prevented the simplification of the standard IFPUG approach till now. Both them were impossible to demonstrate as being true or false till the availability of large benchmarking data bases like ISBSG. Unfortunately those assumptions were also very intuitive, leading the practitioner to feel comfortable with them.

The assumptions that every FP practitioner has always made is that the internal details (complexity rules based on DET, RET, FTR) and types of elements (EI,EO,EQ,ILF,EIF) are indispensable 1) to represent functional “value” to the user and 2) to better correlate functional size to the effort in a cost model. The research made on these two assumptions using international data bases has empirically demonstrated that they are not true. This is not the right place to bother the reader with statistical analysis details but the bibliography is linking the appropriated information sources (thanks to Prof. Luigi Lavazza to have conducted very robust and clear statistical analysis). The Simple Function Point (SiFP) method was

(continued on next page)

A MESSAGE FROM PAST IFPUG PRESIDENT DAVID GARMUS

Being elected as the President of IFPUG was the fulfillment of a career in software measurement. IFPUG enjoyed many achievements during my term, but the agreement by Addison Wesley to publish our first IFPUG book on IT Measurement was the most memorable success. Conversely, it was the year of 911, and our attendance at the IFPUG Fall Conference suffered greatly as a result...truly a year to be remembered.

(Simple Function Points, continued from page 15)

derived from the IFPUG model but uses only two types of elements (logical elementary transactions and logical data store) and does not consider internal details to assign points. For this reason the method is dramatically simpler than the classical one and it is easily usable by any team member with a small training investment. Surprisingly the correlation between SiFP and IFPUG is impressively high and the ratio between the two measurements is 1/1 with a high statistical evidence. Effort models built on SiFP have the same precision as those built on IFPUG. Any IFPUG expert is automatically a SiFP expert, since the second method is a “subset” of the first one. CFPS and CFPP certifications may be considered valid also for SiFP. The training duration is 1/3 of the usual standard training and the reference manual is only 24 pages long. Measurement may be spread to the analyst community with much higher success rate. SiFP may be considered an agile measurement method that requires a time to be computed which is compliant with the short iterations of development cycles in Agile frameworks and the level of detail of information and documentation needed is minimal. SiFP is not only an IFPUG approximation method but it must be considered as a measurement method highly convertible with IFPUG method. Converting the existing baselines is a matter of minutes if the counting details are available (number of EI,EO,EQ and number of ILF, EIF), a spreadsheet is enough and it is not needed to come back to the requirements documents. SiFP is much more easily automated starting from the code giving a better compliance between human and automatic measurement. A measurement expert maintains her/his role in applying the standard rules to the different contexts, frameworks, processes, documentation standards, cost models etc. What is eliminated is the boring part of the game... The published literature support all the findings here reported.

These findings may lead to the question: why do we need to maintain an approach which was based on assumptions that

have proven to be not representative of the reality? The “sliding doors” are opening to a confluence of the simpler method into the traditional one as an evolutionary step, revamping a stable approach with innovation and a stronger suitability to the market demands in order to maintain a lighthouse role to IFPUG. “Keep it simple” is a must !

References

1. Standish Group 2015 Chaos Report - Q&A with Jennifer Lynch, <https://www.infoq.com/articles/standish-chaos-2015>
2. Standish Group 2015 Chaos Report - Q&A with Jennifer Lynch, <https://www.infoq.com/articles/standish-chaos-2015>
3. Quantitative Software Management (QSM) Software Sizing Infographic outlines how and when to use functional size measurement during the software development life cycle. Both authors were involved in the development of this important infographic. - <http://www.qsm.com/infographic/software-sizing-matters>

About the author:

Roberto Meli graduated in Computer Science in 1984. During the past 30 years he has developed focused competences in project management and software measurement areas and has written more than 75 papers for technical magazines and international conferences. He is a consultant and lecturer in training courses on project management and software measurement for many major Italian companies and public organizations. He developed the Simple Function Point method, the Early & Quick Function Point Analysis method. Currently, he is President of the Simple Function Point Association (SiFPA – www.SiFPA.org).

A MESSAGE FROM IFPUG PRESIDENT TOM CAGLEY

*The role of the President of IFPUG, twice, has been a highlight of my professional career. Over the years I have been involved with IFPUG, we have worked diligently to be truly international participating in conferences in Italy and India. The people of IFPUG are what makes participating in IFPUG special, the relationships have made my career much richer and I hope that I have contributed even a portion of the benefit you have provided to me! —
Happy Anniversary!*