



FUNCTIONAL MEASUREMENT IN BRAZIL A GLIMPSE INTO THE PAST WITH MAURICIO AGUIAR

By: Joe Schofield

Recollecting that the “I” in IFPUG stands for International should surprise none of our members; however, the rapid adoption and sustained participation by our members in Brazil may be a surprise. Granted, Brazil is South America’s most populous nation with more than 210 million people. Nearly one-half of its residents are under the age of 21. Brazil’s economy is one of the world’s 12 largest.⁹ All totaled, roughly 13 of the world’s 15 largest economies have IFPUG members.

Brazil, like many of IFPUG’s membership countries, sustains a prominent role in software measurement through participating volunteers and its application of function point analysis. Brazil had the highest number of CFPS professionals for most of the past 10 years, has been the source of many committee members, three Board members and a two-time IFPUG president. This article offers a recap of that involvement through 2012 and an update since that time. Brazil’s history reflects some of the struggles and successes that many of us face as members, organizations and nations. Some of the insights you might collect by reading this brief article touch upon the roles of measurement, people and government specifically across Brazil.

Abridged Background

In 2012, Mauricio Aguiar’s presentation in Rome¹ summarized the introduction and adoption of Function Points in Brazil. A closer review of this lengthy seminal article is recommended for the interested reader. Following is a mere sampling of the content in the referenced paper from 2012 and revisited in a recent interview in 2022:

1994 – the first CFPS exam in Brazil sponsored by UNISYS Eletronica

1995 – the first software measurement book published in Brazil by Aguinaldo Aragon²

1998 – the establishment of the Brazilian Function Point Users Group (BFPUG)

2000 – the election of the first Brazilian to the IFPUG Board of Directors

2001:2007 – 1098 CFPS candidates in major cities around Brazil took the exam

2009 – BFPUG begins to sponsor annual conferences

2010 – Brazil's largest city, Sao Paulo, was the site of the International Software and Measurement Analysis (ISMA) Cinco featuring many international speakers

2010 – Brazil's government, via its Ministry of Planning, introduced the use of Function Point Analysis for software development contracts; Brazilian organizations begin to utilize a "price per function point" approach for software development contracting

2012 – memberships in Brazil account for 34% of all of IFPUG's³, and CFPS certifications from Brazil to 42%⁴

Catching up with Mauricio Aguiar – International Appeal and Outreach . . .

In the late 1990s, Mauricio was co-responsible for hundreds of software developers at Brazil's Caixa Econômica Federal Bank, a state-owned institution, the fourth largest in Brazil and Latin America.⁵ Function Points were being used at Caixa for contracting software development and support costs. In 2008 the Brazilian Ministry of Planning established guidelines for using metrics for software development contracts. This directive opened the door for stronger contract negotiation based on product, in this case, software sized with function points. About that same time, the Gartner Group was advocating Function Points for sizing software capability. Several other consulting companies, airlines and financial institutions were adopting Function Points as part of their measurement efforts. These events set the stage for Mr. Aguiar's professional interest in Function Points and subsequent involvement in IFPUG. He founded BFPUG in 1998 and within a year its membership approached 100.

Mauricio credits then IFPUG Board Members for their encouragement, advocacy and mentorship beginning at his first IFPUG event that he attended in New Orleans in the spring of 1999. Later that fall he joined the CMC at what was described as the "boat" conference, also in New Orleans. Subsequently, he was elected to the IFPUG Board of Directors as the first non-North American (nNA). His first role was that of the Director

of International Affairs, a title that would attract innuendo and raised eyebrows. Mauricio would become IFPUG's first nNA President in 2005 and IFPUG's second-ever two-year two-term President re-elected in 2017. He hosted the first IFPUG annual conference outside of North America in 2010, ISMA Cinco in São Paulo, Brazil's largest city. As early as 2012, 42% of all IFPUG's CFPS professionals resided in Brazil; another first highest outside the United States, and more than one-third of IFPUG's membership resided in Brazil. In 2013 he hosted the ISMA conference in Rio de Janeiro and returned to São Paulo in 2018. Reinforcing the international flavor and wide-reaching sharing of cultures and ideas, the 2018 conference included speakers from not less than five nations. As recently as 2020, Brazil still had 28% of the world's CFPS professionals.



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Mr. Aguiar acknowledges several others with major contributions to the emergence of IFPUG, function point analysis and software measurement in Brazil. Marcio Silveira and Diana Baklizky, both former IFPUG committee and Board members, have recognized names in IFPUG circles. Similarly, Carlos Vasquez's groundbreaking work promoting software measurement was impactful throughout Brazil. Of course, many other prominent individuals have helped to promote software cost estimation throughout the country.

The use of Function Point Analysis throughout Brazil, especially for software cost estimation and contracting is but one example of its early international appeal. Other national governments including Italy and South Korea established similar directives. Much of the success of FPA in Brazil stems from Mauricio's passion and investment in IFPUG, BFPUG and software



measurement in general including his interests in the Constructive Cost Model, aka COCOMO. Due to his internationally recognized software measurement interests, in 2004 he was invited to speak to a South Korean chapter of IFPUG in South Korea along with fellow IFPUG past president Carol Dekkers. Mauricio shared the significance of FPA with in-person presentations in the United States, Italy, Argentina, Colombia, Mexico, Spain and the Netherlands.

While not as actively involved in TI Métricas today, Mauricio grapples with applying agile value delivery thinking to traditional software development contract pricing. Asserting that size divided by price equals unit cost (size/price = unit cost) he is uncomfortable with agile-based contracts that suggest as he describes “give us some money and we’ll deliver what we can.” In his mental model, that agile funding model is similar to paying for effort and not results.

Pandemics disturb economies, business commitments and people relationships. The same can be said about the convening of professional groups like BFPUG and IFPUG. BFPUG last gathered in person in 2019. Travel restrictions, changing health and safety protocols, and general disruptions have taken a toll on many lives, businesses and organizations. While some prognosticators suggest that things will never go back to the way they were, others may argue we will not experience leaps in progress given today’s circumstances. Professional groups like IFPUG, BFPUG, NESMA, GUFPI-ISMA and ISBSG help to evolve the nature of software measurement, software development and, as evidenced above, governments and economies. We often underestimate the relevance of such organizations and volunteers in shaping our futures. No doubt Brazil’s adoption and application of FPA has contributed to the growth and prominence in IFPUG in the earliest decades of our millennia.

Postscript and Congratulations

In the fall of 2021, Mauricio Aguiar was nominated and inducted as an Honorary IFPUG Fellow.

Special Thanks

Mauricio Aguiar for numerous interviews and reviews related to the accuracy of this article and Michael Canino for his research into the CFPS numbers for the past 10 years referenced in this article. 🌐

REFERENCES:

- ⁰ <https://www.investopedia.com/insights/worlds-top-economies/>
- ¹ When Metrics Mean Business; Software Measurement European Forum; Mauricio Aguiar; 2012; Rome, Italy
- ² Gerencia Efetiva de Software Atraves de Metricas (Effective Software Management through Metrics); Aguinaldo Aragon; 1995
- ³ Different membership types make this number difficult to verify from IFPUG records; this value was generally understood at that time
- ⁴ Unofficial best number from CMA; Michael Canino; 3/14/2022
- ⁵ Caixa Econômica Federal, also referred to as Caixa, is a state-owned Brazilian financial services company headquartered in Brasília, Brazil. It is the fourth largest banking institution in Brazil, as well as the fourth largest in Latin America,

ABOUT THE AUTHOR



Joe Schofield has more than 80 published books, papers, conference presentations and keynotes including contributions to the books *The IFPUG Guide to IT and Software Measurement*, *IT Measurement*, *Certified Function Point Specialist Exam Guide*, *The Economics of Software Quality* and his recently released *Aligning People and Culture for Agile Transformation*. He has facilitated ~200 teams in the areas of software specification, team building, organizational planning and Agile transformation. He holds eight Agile-related certifications: SA, SCT™, SSMC™, SSPOC™, SMC™, SDC™, SPOC™ and SAMC™. Joe was a CMMI Institute-certified instructor, an IFPUG Certified Function Point Specialist (CFPS) and a Lockheed Martin-certified Lean Six Sigma Black Belt. He is a past IFPUG President and for more than a decade he served as the “Chief Process Officer” of an organization of 400 software engineers.