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METRICVIEWS EDITORIAL BOARD:

In a very short period of time, IFPUG's membership working closely with CMA, has delivered six multi-disciplined articles for this Spring's *MetricViews*. We have articles that are casual and scholarly, short and long, introductory and from first- and long-time authors. The table of contents reveals topics as varied as value metrics and knowledge models, software sizing and supplier downsizing, benchmarking and volunteering, and simple function point estimation from requirements. If you're a business analyst or project manager, developer or architect, tester or scrum team member, CIO or CTO, tax collector or IFPUG Board member, I think you'll find something worth your interest. Okay, maybe not the tax collector.

Speaking of tax collectors, how long will it take before governments find a way to tax everything generated from artificial intelligence (AI)? You'll find an article with ChatGPT thoughts in this issue. If you can't wait to find it, consider what ChatGPT had to "say" about *"Why should the industry use Function Points for software measurement?"* generated on April 10.

1. ***Consistency:*** Function Points provide standardized measures for software size and complexity, allowing organizations to maintain consistency in software measurement across different projects and teams.

2. ***Objectivity:*** Function Points measure software functionality based on user requirements, instead of measuring lines of code or other technical metrics. This helps to make the measurement process more objective.

3. ***Communication:*** Function Points provide a common language for communication about software development projects, allowing stakeholders to communicate effectively and understand the level of effort required for specific features.

4. ***Estimation:*** Function Points can be used to estimate the effort, cost, and duration of software development projects, based on historical data and the scope of the project.

5. ***Benchmarking:*** Function Points can be used to benchmark software development projects against industry standards, allowing organizations to identify areas where they may need to improve their processes.

6. ***ROI:*** Function Points can help organizations determine the ROI of software development projects, by measuring the value delivered to users against the cost of development.

7. ***Planning:*** Function Points can help organizations plan software development projects more effectively, by providing a clear understanding of the level of effort required for each feature and allowing for more accurate scheduling and resource allocation.

I thought the AI engine did a pretty remarkable job in its "response." Topically, each of those seven items listed above can be found in this *MetricViews* issue. While you see the authors listed for each article, you don't see the Editorial Review Board members who work with the authors to clarify content and expression. In this issue, in addition to the finishing touches from our CMA partners, the reviewers include: Julián Gómez, Carol Dekkers, Peter Thomas, Steven Woodward, and our newest contributor Christine Green.

Be well, stay well.

Joe Schofield
MetricViews Editor
& Past President

AN APPROACH TO IMPROVING THE ROBUSTNESS

OF SOFTWARE USER REQUIREMENT SIZING

By: **Charley Tichenor**

B ackground

When learning a mathematical method, I find it useful to study the original published paper written by its innovator. That paper usually describes how the method works. It also gives insights as to its foundations. Such a paper exists for function points. It was delivered by Dr. Allan Albrecht in 1979, "Measuring Application Development Productivity." (Albrecht, 1979)

> " My interpretation of Dr. Albrecht's paper is that it has two basic components. One discusses the establishment of the function point method as a matter of "metrology," or measurement science. Another is the business use of function points.

Sizing Software User Requirements and Measurement Science

My interpretation of Dr. Albrecht's paper is that it has two basic components. One discusses the establishment of the function point method as a matter of "metrology," or measurement science. Another is the business use of function points. This includes the statistical correlation between the number of function points to develop and the work effort to develop them. There are also other uses, but that paper focuses on work effort. Improving this correlation improves work effort forecasting and therefore good project management. Keeping *both* of these components in mind during function point counting (or Software Non-Functional Assessment Process (SNAP) counting), in my opinion, is jointly necessary. This applies to other corresponding software metrics, too, such as schedule, quality, etc. Let's discuss sizing software user requirements first.

Sizing Software User Requirements

Software user requirements fall in two major groups, depending on their purpose. Some requirements are written to express "what" the user requires. The International Organization for Standards (ISO) calls this "functional" user requirements. It defines these user requirements as "requirements that describe what the software shall do, in terms of tasks and services." (ISO/IEC 14143-1) (COSMIC, IFPUG, 2015) IFPUG interprets the "what" as being external inputs, external outputs, external inquiries, internal logical files, and external interface files. These are measured in terms of IFPUG function points. More information can be found in the IFPUG function point "Counting Practices Manual 4.3.1" (CPM). (IFPUG 2010) From CPM Part 1, page iii, "This international standard is the latest release in the continually improving IFPUG method that promotes the consistent ISO/

IEC 14143-1:2007." (IFPUG, 2010) According to ISO/IEC/IEEE 24765:2010, a "non-functional" software user requirement is "a software requirement that describes not what the software will do but how the software will do it." (COSMIC, IFPUG, 2015) IFPUG measures four categories and 14 subcategories of these as SNAP points. For SNAP, refer to "IEEE 2430-2019 - IEEE Trial-Use Standard for Software Non-Functional Sizing Measurements." Also refer to ISO "Software Engineering—Trial Use Standard for Software Non-Functional Sizing Measurements." (IFPUG, 2023) The IFPUG manual for SNAP is the "Software Non-functional Assessment Process (SNAP) Assessment Practices Manual." The current release is 2.4. (IFPUG 2017)

Measurement Science

There are several national and international standards organization which define and describe "metrology." For example, the U.S. National Institute for Standards and Technology (NIST) defines it as "the science of measurement and its application." "A key component of NIST's metrology work is metrological traceability, which requires the establishment of an unbroken chain of calibrations to specified reference measurement standards: typically national or international standards,…" (NIST, 2023). The following quotation and other parts of Dr. Albrecht's paper show that the 1979 function point standards meet this metrology definition.

> "The general approach is to count the number of external user inputs, inquiries, outputs, and master files developed by the development project. These factors are the outward manifestations of any application. They cover all the function in an application.
>
> "These counts are weighted by numbers designed to reflect the function value to the customer. The weights used were determined by debate and trial. These weights have given us good results:
>
> • Number of Inputs * 4
>
> • Number of Outputs * 5
>
> • Number of Inquiries * 4
>
> • Number of Master Files * 10"

One might say that this is part of the approach "Function Points 1.0." The function point measurement technology has improved and also adapted to new software technology. More on that shortly. But the point here is that from this basic standard, IFPUG function points evolved into CPM 4.3.1 and ISO standardization. "Measuring Application Development Productivity" defined a software user requirement sizing method that met the standards of metrology. It has only improved over time.

I think that the second component of the paper regards the statistical significance of the comparison between work effort (productivity) and the functional size of user requirements (function point count). The paper concludes as follows.

"The function-based measurement has proved to be an effective way to compare productivity between projects. Before it was established we could only compare projects that were alike in language and technology, or we had to face the difficult problem of comparing estimates of hypothetical projects against actual results. We need to continue using and improving the function value measurement."

And the last sentence brings me to the point of this article.

IFPUG Methodology

In my experience, some function point counters limit their practice only to the metrology of the ISO standards. They do not consider how using improvements in and clarifications of the IFPUG methodology can affect the robustness of their counts and corresponding costing. These improvements may come from a variety of sources. That being said, white papers from the IFPUG committees should be considered to improve the local correlation between work effort and functional user requirement size. The same position applies to SNAP point programs.

"Improving the function value measurement" is one of the tasks of certain IFPUG committees in particular, and IFPUG in general. (Dr. Albrecht improved his original measurement process, for example, in his 1983 paper "Software Function, Source Lines of Code, and Development Effort Prediction: a Software Science Validation,") (Albrecht, Gaffney, 1983) White papers can show how to use the IFPUG standards with new software technology. They can be used to clarify how to apply the current IFPUG standards. They provide other information such as clarifications, corollaries, interpretation of the rules, and examples. White papers typically require months of volunteer thinking and development. Each published IFPUG white paper was approved by the Board of Directors. Each is endorsed by IFPUG. Quoting the CPM, Part 1, page 1, paragraph 1.3: "NOTE: IFPUG continues to publish white papers providing guidelines for use in evolving environments and domains." In my opinion, there is no reason why white paper guidelines cannot be used as counting standards in software development contracts or organizational software development programs if those guidelines improve the correlation between work effort and software user requirement size and are agreeable to the involved stakeholders.

White Papers

The white papers "Integrating Procedures for Function Point Analysis and the Software Non-functional Assessment Process (SNAP)," parts 1 and 2, were joint projects between the FSSC and the NFSSC. Among other things, they clarify the borderlines between function points and SNAP points. Those clarifications can be used as counting practices in software development contracts or organizational software development programs. They also describe the value of using both function points and SNAP. The white paper "Boundaries and Partitions" clarifies how to subdivide an application's boundary into subsets called partitions. This improves the non-functional user requirement software sizing accuracy. It can also be used to help resolve confusion between stakeholders as to how to identify partitions. The white paper "Using the General Systems Characteristics with the Software Non-functional Assessment Process (SNAP)" describes, among other things, how to resolve overlap issues when using both SNAP and the General Systems Characteristics. These white papers are all available on the IFPUG website.

> **IFPUG white papers can contribute to the robustness of the metrology of local function point programs and SNAP programs.**

IFPUG white papers can contribute to the robustness of the metrology of local function point programs and SNAP programs. Their guidelines can improve the correlation between work effort and sizing. I think that this is line with Dr. Albrecht's ultimate goal of focusing on software user requirement sizing for better costing. I strongly recommend that counters and managers do not limit themselves to just the ISO standards if the stakeholders also agree to use the guidelines of the white papers. This is not counter to the CPM; in fact, I think that the CPM encourages it.

Finding White Papers

On the ifpug.org website page, click on the words "Learning Center" in the header. Now click on the words "WHITE PAPERS" in the header. Click on the white paper you want. You will now get the option to download a PDF if you are a member or to purchase it if you are not a member.

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ABOUT THE AUTHOR

Charley Tichenor joined IFPUG about 1993 and has served on the Non-functional Sizing Standards Committee since 2012, where he is currently Vice-Chair. He is also on the Business Applications Committee. His experience includes being certified as a CFPS, and as function point team leader of eight counters for three years with the U.S. Internal Revenue Service where he either counted or supervised the counting of more than 425 applications and 1,000 annual enhancements.

CLOUD FLIGHT OPTIMIZATION:
THE STRATEGIC PERSPECTIVE

By: **Steven Woodward**

Cloud Computing Benefits and Challenges

Cloud computing and virtualized technologies continue to evolve where transparency and metrics are needed to make informed decisions, maximize value and manage risks while utilizing the right services at the right time from the right combination of internal and external "talent pools."

Cloud services offer tremendous opportunities and realistically have helped many organizations meet the expedited work-from-home directives, required due to COVID-19. Conversely, many have experienced cost overruns and budgets being depleted before projects are completed or funds reallocated.

Frequently, cloud computing is perceived as a "panacea," where IT challenges can be "outsourced" to a third party, and that operational infrastructure is a more dominant expenditure than the applications using the infrastructure services (compute, storage, and network). Costs are impossible to evaluate without detailed analysis of the applications using and offering cloud services.

Using cloud services is a complex eco-system, where financial, sovereignty, resiliency and security considerations impact the outcomes, both positive and negative.

Using Checklists to Operationalize, Optimize and Manage Risks

A similar approach used by aircraft pilots can be applied to IT systems, to use simple extensible customizable checklists in conjunction with key metrics to be informed and to have situational awareness. This allows the team to take appropriate actions to maintain control, mitigate risks and optimize human and technical resources.

A sample checklist is provided as part of this article to serve as an extensible framework to help proactively plan, govern, and manage the cloud environment.

Cloud Types and Aircraft Types Impact Checklists

Aviation aircraft types and cloud computing types have different types of customized checklists. For example, Airbus A319 vs Airbus A380, and for cloud computing software as a service, versus infrastructure as a service. The checklists may be further organized and sub-divided by activity. For aviation this may be arrival, departure, and handling of specific incidents. For cloud computing this can include planning, securing, authorizing, monitoring, migrating, deploying and exiting.

Innovation, agility and flexibility are good cultural aspirations that resonate well with staff; however, the reality is that standards and repeatability also offer further increased margins for safety and improved outcomes for critical activities. Therefore, similar to airline cockpits, a combination of structured standardized processes (including measures and metrics) within a collaborative agile team environment that can effectively respond effectively to given situations and opportunities is the optimal solution.

Functional Sizing as a Core Instrument/Measure

Functional size (IFPUG Function Points) is like "altitude" for flying an aircraft; it's not the only measure, but it is an important one. The details that comprise the function point value also contain information that further helps provide perspective and situational awareness (applications, functions, data).

In cloud computing the business users want resilient, scalable, quality, and automated solutions that are trustworthy, effective and efficient. A strong functionality lens perspective helps

business and technical teams deliver and support systems that achieve the desired business outcomes.

Cloud computing is a major enabler but needs to be more closely planned and monitored than non-cloud technologies. This extra care is due to the flexibilities and accompanying complexities from the cloud eco-system of cascading suppliers and usage-based pricing models.

Function point measures and associated derived metrics provide meaningful insights to maintain control and optimize the cloud benefits, while effectively governing. Some example scenarios are provided:

SCENARIO	DESCRIPTION	APPROACH AND SCOPE	FUNCTION POINT MEASURES AND METRICS EXAMPLES	FUNCTION POINT INSIGHTS
Replace an existing in-house business system to use a Software as a Service (SaaS) cloud solution	Major business objective is reducing the ongoing support and maintenance costs for the business system	Establish chart of accounts, identify current baseline costs, model future costs	Application size: 2000 FP; existing support cost: $150/FP ($300K/year); SaaS functionality required: 4000 FP; Customization to SaaS: 200 FP @ $1,000/FP; Ongoing monthly SaaS support $100 per user per year @ 10 users = $1,000	The decision to move forward with the SaaS solution is not straight-forward. The SaaS solution requires users to be more familiar with twice as much functionality (additional business/admin expense); SaaS customization not extensive, overall strategic maintenance costs will be lower ($/FP for yearly support). Total costs/benefits need to be explored that include business, support and technical perspectives.
Migrate an existing application on legacy dedicated infrastructure to a public cloud infrastructure	Major technical objective is to decommission the existing legacy infrastructure	Identify size of the application and "cloud readiness" that impacts cloud migration and support plans and costs	Application size: 4000 FP; existing support cost: $50/FP ($200K/year); 20% of the sets of data (ILFs) are sensitive, application is not "cloud native" or has applied security by design principles	The application is not a good candidate for "lift and shift" to the public cloud. The application will require redesign in order to secure the services & data, plus optimize for public cloud. 4000 FP @$1,200/FP is a realistic expectation for migration, totally $4.8M, not including Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) costs.

As described earlier, "checklist" approaches are an excellent strategy to guide and establish standardized approaches and that are repeatable, and value focused. An example checklist for public cloud application migration is provided that can be customized and extended.

CHECK	Activity
	Complete FPA
	Identify data sets (ILFs) and classify and categorize the data
	Identify functionality (EIs, EOs, EQs) with administrative privileges
	Identify regulatory or policy considerations that require compliance with (for example sovereignty and control)
	Non-Functional considerations (resiliency, privacy, latency, scalability)
	Costing considered for total cost of ownership/usage (includes exit and secondary providers)
	Evaluate degree of public cloud readiness – technical (includes architectural)
	Evaluate degree of public cloud readiness – cultural
	Evaluate security readiness and maturity (automation and processes)
	Identify and provision preliminary public cloud services (gain experiences and insights)
	Identify budgetary and other constraints
	Generate detailed roadmap to proactively plan and organize

Closing 'Final Approach/Landing' Considerations

The use of private and public cloud computing services has had a wide range of successes and failures. In some cases, the savings have been tremendous (greater than 70% cost reductions), in other cases the costs have been much higher than traditional dedicated infrastructure.

One of the keys to success is effectively using measures, metrics and the information derived so that positive outcomes can be realized and that risks can be proactively mitigated.

Business functionality remains the core value-focused objective for automation and information technology. Public and private cloud infrastructure are valid options, but need to be analyzed, planned, monitored and managed using consistent, flexible frameworks and approaches that can help simplify decision-making and overall governance in this complex, modern eco-system.

ABOUT THE AUTHOR

Steven Woodward, Cloud Perspectives is an IFPUG Fellow and former committee chair of New Environments and Standards, while also frequently presenting and educating on the IFPUG functional sizing standards and benefits. Steven is also involved with other standards groups including IEEE, NIST, ITU-T, Cloud Security Alliance and ISO where he is liaison for the cloud computing and software standards sub-committees. His recent assignments have included Canadian government agencies planning, advising, assessing and developing roadmaps and evidence to obtain Authorization to Operate (ATO) and maximize the benefits, while mitigating the risks related to cloud services.

APPLICATION OF THE SECI KNOWLEDGE MODEL

By: **Joe Schofield**

A **bstract:** Ikujiro Nonaka and Hirotaka Takeuchi are not the first names you might associate with agile frameworks or Scrum in particular. Yet, as progenitors of the age of agility, perhaps they should be. Their proclivity to pioneer persisted with the knowledge generation model known as SECI. Evidence of its usefulness surrounds us, even in the realms of functional measurement, metrics, and benchmarking.

What came first: the chicken, or the egg? [0] Scrum or agile? Iterative and incremental development or adaptive software development? Daily stand-ups or user stories? Software functional measurement or software benchmarking?

Sometimes it all depends on who you ask. Best to ask someone who knows. If that's too much to pursue, then read on.

Scrum or agile? Many agilists might blurt out that Scrum, at least as described by Schwaber and Sutherland, predates agile for software with deference to the development of the agile manifesto. Schwaber and Sutherland presented their novel approach to software development in Austin, Texas, in 1995.[1] And, it wasn't until early in 2001 that the development of the Agile Manifesto began.[2] But that does not settle the question. In 1986 the word "scrum" was used to describe a team moving an item forward in its initial development with specific application of the "rugby approach."[3] Manufacturing was the subject of this innovation not software. Nonetheless consider the characteristics described by Nonaka and Takeuchi's paper when compared to Scrum and the agile principles that remain popular today.

	Nonaka & Takeuchi Characteristic[4]	Parallel to agile principles (A,n) and Scrum (S)
1	Built-in instability	Welcome changing requirements; even late in development (A,2)
2	Self-organizing project teams	A Scrum foundation, trusted teams (A,5); best work products (A,11)
3	Overlapping development phases	The heart of iterative development
4	"Multilearning," Cross-fertilization	The essence of cross-functional Scrum teams[5,6]
5	Subtle control	Scrum's empirical process control (S); intervals of reflection (A,12)
6	Organizational transfer of learning	Implicit (A,12); Scrum of Scrums (S)

Regarding the fourth characteristic above referencing "cross-fertilization," one could be accused of being remiss if foregoing the acknowledgement that the italicized text below sounds very similar to Alistair Cockburn's "osmotic communication."

"When all the team members are located in one large room, *someone's information becomes yours, without even trying.* You then start thinking in terms of what's best or second best for the group at large and not only about where you stand. If everyone understands the other person's position, then each of us is more willing to give in, or at least to try to talk to each other. Initiatives emerge as a result." [7]

Given the similarities above, one could reasonably posit that the concepts of agile and the bedrock of scrum were inextricably portrayed together in *The New New Product Development Game.* Consider that half-a-century earlier Shewhart's Plan-Do-Check-Act (PDCA) stipulated iteration[8], as well as experimentation. But Scrum's empirical process control is a far cry from Shewhart's statistical process control (SPC) in the 1920's.[9] Nor does SPC align well with the Manifesto's initial value statement of "individuals and interactions over processes and tools." Regarding the sequence of Scrum or agile, perhaps the answer is merely "yes" with neither as a relevant predecessor of the other.

Measurement advocates may be pondering, "What does any of this have to do with software functional (or non-functional) size?" While software, hardware, and services products are developed today using agile techniques, many with user stories, the potential of aligning story points with function points is hardly novel.[10] We turn again to Nonaka and Takeuchi who provided us with much more than scrum and agile concepts. Nonaka early on, and Takeuchi later, were also the developers of the SECI knowledge model wherein a broader more expansive learning awaits.

Socialization, Externalization, Combination, and Internalization[11] (SECI) Knowledge Model

As highlighted in the footnote[12] this abbreviated overview merely introduces the SECI model. The importance of this topic flows from its bridging—if only in part—between today's agile software development (iterative development) and of IFPUG's own expanding knowledge domains (incremental accretion). Perhaps a simpler and clearer description of the model was coaxed from ChatGPT;[13]

The SECI model of knowledge creation describes the process of how knowledge is created and shared within an organization. It consists of four main modes: Socialization, Externalization, Combination, and Internalization. The SECI model shows how tacit knowledge (personal knowledge that is difficult to formalize and communicate) is converted into explicit knowledge (codified and documented knowledge) and vice versa through socialization, externalization, combination, and internalization. Socialization refers to the

process of sharing tacit knowledge through direct interaction and observation, while externalization involves articulating tacit knowledge into a form that can be shared with others. Combination refers to the process of merging explicit knowledge from different sources, and internalization is the process of converting explicit knowledge into tacit knowledge through learning and application.

Figure1 below identifies the four quadrants, or modes of knowledge conversion in the SECI. Each of these stages represents a type of knowledge contagion from person (individual) to person, from person to team (group), and from team to organization (a "container" of teams).
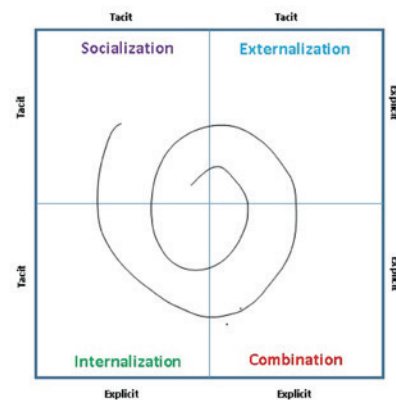

Figure 1:
SECI Knowledge Model

> ❝ While software, hardware, and services products are developed today using agile techniques, many with user stories, the potential of aligning story points with function points is hardly novel.

A brief description of each of the four quadrants includes:

1. *Socialization* is the sharing of knowledge between (not among) individuals. It may include tutors or mentors, and often observation that becomes imitation. Labeled as tacit, it is typically spoken or verbal.

2. *Externalization* is the codification of knowledge that can be shared with others, as with a team or networking group. It may include images, text, and models that may be formally published or merely notes, checklists, diagrams, or cuneiforms. Described as explicit, it captures verbal expression in a written format.

3. *Combination* is the identification of connections among explicit knowledge domains such that comparisons, analysis, and processing of knowledge—within and beyond the organization itself—leads to new knowledge and understanding. Considers a collection of domain teams convening to solve a challenge to which each holds a piece of the puzzle. Also described as explicit, harvestings are written but not necessarily textually. See externalization for other retention techniques.

4. *Internalization* is the application of new knowledge due to combination, at the individual level, to identify patterns (CRM) while applying them to domains of non-origin. The application of observed events and outcomes is typically expressed first verbally; thus, the looping or spiraling effect back to tacit.

Selected comparisons and contrasts between the SECI and other similar concepts:

• The Personal Software Process (PSP), the Team Software Process (TSP), and the Capability Maturity Model Integration (CMMI) similarly focused on individuals, groups, and organizations, respectively.

• As attributed to George Box, "all models are wrong, but some are useful."[14] The SECI model has its distractors.[15] While the model may not be precisely representative about all instances of knowledge sharing, its premise of knowledge spreading from individuals eventually to groups and the organization is both practical and empirical.

• The Four (learning) Stages of Competence in psychology[16] differs from the SECI model as its focus is the staging of learning by an individual for a skillset from *unconscious incompetence* to *unconscious competence.* This model is individual-centric, though its application need not be limited to individuals.

• Malcolm Gladwell's 10,000 hours of learning in pursuit of mastery[17] of a skillset pertains to a given knowledge domain; it has little to do with group or organizational learning.

• The notion of the "spiral" in the SECI is reminiscent of those familiar with Barry Boehm's work around software development and the spiral model introduction in 1986.[18]

The following table exemplifies the use of the SECI knowledge model with the introduction of function points almost 45 years ago and more recently, Software Non-functional Assessment Process (SNAP). The example suggests each of the SECI stages, the transitions among tacit and explicit, and the connections among individuals, teams, and organizations. Other potential IFPUG-relevant fields of knowledge that could have been used in the example include: measurement, metrics, Simple Function Points, and benchmarking.

An SECI Example–Knowledge Sharing Within IFPUG

ACTION	SECI STAGE	TACIT / EXPLICIT	INVOLVES	CONTENT APPLIED
A member shares an idea verbally with a fellow member	Socialization	Tacit to tacit	Individuals to individuals	Function Points
The idea is presented at a conference or in an article such as this	Externalization	Tacit to explicit	Individual to groups	Function Point Analysis
Other committees' members apply past knowledge to become a standard like ISO	Combination	Explicit to explicit	Groups to organization	SNAP
IFPUG shares its new standard with members who understand how to apply it	Internalization	Explicit to tacit	Organization to individuals	Function Point Analysis and SNAP

Why does this matter and why should we care? The SECI knowledge model serves as a:

• reminder to the importance of writing, drawing, or otherwise recording knowledge,

• lens to better understand knowledge contagion, and perhaps how to stunt misleading information,

• taxonomy for determining the "stage" of knowledge sharing and to how to accelerate its internalization,

• pattern for successful introduction of emergent thinking and targeted communication channels.

The SECI model also helps us to recognize how interconnected technical and social skillsets can be assimilated for accelerated knowledge dissemination among individuals, groups, and organizations. The outcome of such learnings is of value to IFPUG, our own organizations, and ourselves.

But Wait, There's More

For integrity's sake, let's return to the opening questions in this article and proffer some answers.

• Adaptive software development techniques such as eXtreme Programming, Feature-Driven Development, Test-Driven Development, Crystal Clear Methodology, to name a few,

became popular in the 1990s. Barry Boehm's Spiral Model, arguably with iterative and incremental embedded, appeared in 1986. But some 30 years earlier, in 1957 Gerry Weinberg is quoted as using incremental development in Los Angeles, at IBM.[19]

• Daily stand-ups or user stories?[20] Daily stand-ups were practiced in 1993 and included in conference proceedings in 1994. [21] Sutherland seems to have incorporated them into what was becoming Scrum for software. User stories were being used around the same time in Detroit by Kent Beck. Alistair Cockburn is credited with devising the phrase "user stories" and Mike Cohn with the "so that" or business purpose often used today.[22]

• Software functional measurement[23] or software benchmarking.[24] While two references are provided, I leave deeper investigation to interested parties.

Closing

The array of learning, improvement, and communication models, many of which are referenced in this article, fosters innovation within technology and society. Mastery of all of them isn't necessary for us to grow from any one of them. We see the benefits of their usage, intended or otherwise, in our daily engagements and work products. This holds true in our own areas of special interests in IFPUG. Recognizing those patterns may help us to accelerate reaching desired outcomes, in work as in life.

REFERENCES:

[0]Genesis 1:21 describes the creation of animals, including winged birds, on the 5th day; no eggs were mentioned.

[1]Business Object Design and Implementation Workshop held as part of Object-Oriented Programming, Systems, Languages & Applications '95; (OOPSLA '95) in Austin, Texas

[2]https://www.agilealliance.org/agile101/the-agile-manifesto/

[3]The New New Product Development Game; Nonaka and Takeuchi; Harvard Business Review; 1986

[4]Ibid, pg. 138

[5]The Scrum Guide; November, 2020; Schwaber & Sutherland; page 5

[6]Scrum Body of Knowledge; SCRUMstudy, Edition 4, 2022; pages 21, 23, 47, 57, 116, et al

[7]The New New Product Development Game; Nonaka and Takeuchi; Harvard Business Review; 1986; pg. 140

[8]https://en.wikipedia.org/wiki/PDCA; retrieved 3/20/2023

[9]https://en.wikipedia.org/wiki/Statistical_process_control; retrieved 3/19/2023

[10]Function Points, Use Case Points, Story Points: Observations from a Case Study; CrossTalk; May / June, 2013

[11,12]This short space does not allow, nor I am capable of detailing the intricacies of Nonaka's (with refinements later from Takeuchi)

SECI knowledge model. The serious scholar is encouraged to execute a more thorough search of the Model, its uses, and criticisms to extricate salient gleanings.

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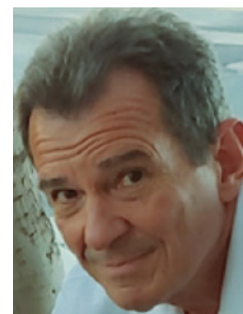
Joe Schofield, SCT, SCAC, SSMC, SSPOC, SMC, SPOC, SDC, SAMC, CSQA, CSMS, SA IFPUG Past President

THREE RISKS OF DOWNSIZING
SOFTWARE DEVELOPMENT VENDORS

By: **Julián Gómez**

Some companies have started to reduce the number of software suppliers they will utilize over the next few years to between three and five suppliers. Is this a good idea?

This seems to be a great idea. Concentrating on just a few suppliers limits the time spent managing them; managing three vendors is not the same as managing 30. We reduce the lines of communication, the time spent on generating and signing contracts, the managing of KPIs, and on duplicative purchasing processes among different departments. In short, we eliminate administration excesses, but do hidden costs exist with this consolidation?

We may think that the cost is optimally established during the negotiation of contracts with these software providers. Large contracts are established for several years, often at very favorable rates. Then, the problems begin.

Risk No. 1: The Deception of the Low Rate

When we establish a low rate with a vendor, we can be satisfied with that or ask: what else could we negotiate? Or do we have the lowest cost? Well, no, you may not.

A software product is delivered with these development projects. The price we must consider is the price of the product (by function point), which is a different approach than using an hourly development rate.

The price of the software product includes the cost rate and the amount of effort required to make it (productivity). If we don't incorporate both, a vendor may charge you very little per hour, and then bill you for excessive hours.

As an example, Quanter Software Development Market 2023 report identifies three large software development vendors in which the cost per unit of software product (function points) and the productivity they offer to different clients for the same technology are quite different. A vendor charges up to three times more to one client versus another. Not surprising, this tactic is common in the market.

Risk No. 2: Porter's 5th Force

Michael Porter established an analysis of five forces that should be balanced to achieve company success: Competitor Threat, Competitor Rivalry, New Product Threat, Customer Negotiation Power, and Vendor Negotiation Power.

When we limit the number of vendors, we also limit our choices. These vendors will know that we will have to develop our software projects with them. Knowing so strengthens their position. In turn, they will be able to negotiate from a more dominant position, unless we carefully define the contracts that we will have with them and establishing KPIs that neutralize that power. Do you know how to establish those metrics? Function points and SNAP points enable us to manage and compare product richness.

Risk No. 3: Negotiation Without Market Benchmarks is Like Driving at Night Without Your Headlights

No matter how good your negotiation process is with suppliers, the final price needs a reference to know if it is reasonable or not. It is the final price of the software product as we have already seen that rate alone is not suitable for comparison. Similarly, if I were going to buy a luxury car and the dealer gave me a price, I would go to the market to see what the car really costs. Why not use this same approach in software development?

In all industries, processes standardization enables products and services to be compared with each other and to be successfully benchmarked.

We use function points to measure the software product delivered. Through benchmarking, we can compare ourselves with what the market is doing and then be able to make informed decisions. It is important to take a large database of market references, possibly the largest, so that the comparison is more likely to be correct.

This is such an important area that IFPUG has created a dedicated certification for companies to apply benchmarking. Application Development and Maintenance certifications ensure that companies focused on benchmarking are doing so by following the best practices in the market.

Successful Vendor Downsizing

In order to achieve a successful reduction or concentration of vendors, we must rely on the pillar of comparison with the market (AD/M benchmarking certification). The "pillar" indicates to us if what candidate companies are delivering is comparable to other candidate bidders. This comparison should be based on a measure that encompasses rate and necessary effort. With software products, that measure is IFPUG function points which quantifies what matters to the business. Using these concepts, we can define a framework that can extract the best of both worlds: an improvement in administration processes, and management and optimization of software development costs.

We have seen this success in many clients we have helped. LedaMC has been named as the first and only company worldwide certified for benchmarking software development projects by IFPUG, a global leader in software product sizing.

IFPUG and its standards (function points and SNAP points) and certifications (CFPS/CFPP, CSS/CSP and AD/M benchmarking certification) help client companies to extract the best from IT development teams. It is in our best interests to use them to obtain these benefits for our companies.

ABOUT THE AUTHOR

Julián Gómez Manager of LedaMC & Quanter with more than 21 years of experience in IT Project and Services management, Julián is focused on helping companies to improve their software development processes. He has participated in Software Development projects, Quality Assurance projects, Sourcing, Benchmarking, Software supplier productivity management services, Process Development and Improvement, among others. As an IFPUG Certified Function Points Specialist, IFPUG Certified SNAP Practitioner, PMI Project Management Professional PMP©, PMI Disciplined Agile Scrum Master DASM© and Scrum Manager Autoridad, he has given conferences/trainings in Argentina, Brazil, Chile, Colombia, Italy, Spain, Panama, Peru and Romania. All these experiences have given him a broad vision of Project Management and its best practices. He is the author of two books *El Juego de Tronos de los Proyectos and Guía Práctica de Estimación y Medición de Proyectos Software: ¿Por qué? ¿Para qué? y ¿Cómo?* and blogger in El Laboratorio de las TI (http://www.laboratorioti.com).

BUSINESS VALUE METRICS

Note: This article is based on the ongoing efforts of the IFPUG Business Application Committee.

By: **David Herron**

CEOs and CIOs know that in this highly competitive business world it is important to have the right data at the right time in order to make informed decisions. The data needs to be timely, accurate and relevant to the business. The data that is needed to make critical business decisions come from various sources. Defining, measuring and communicating the business value of IT is challenging for many CIOs.

The timely delivery of quality software can be a key competitive business advantage. IT has a long history of internally measuring its software development and maintenance productivity. But the data derived from those measurement activities has not always been in a language that is understood and therefore useful to the business. Measuring lines of code or counting software defects may have value to IT managers but it doesn't provide much in the way of insight as to the impact those data points may have on the business.

By focusing on the needs of business executives whose businesses depend on IT, senior level IT managers should be seeking to deliver business visibility into IT performance by providing practical advice based on industry best practices.

IT departments don't have the information or metrics readily available to make prioritization decisions, based on business value, which would change direction or stop a project altogether. Too often, project prioritization is driven by other factors, such as the technology being used, the time to completion, resources required, the difficulty of the project, or even who is shouting the loudest.

CIOs and their IT departments have long been engaged in the use of software measures to perform such tasks as estimating and predicting outcomes, measuring productivity performance levels and tracking defects. While these measures and the resulting analytics help IT managers to better design, develop and deploy software, they are not directly related to business value.

Business value metrics are simply that, various data points that provide valuable insight to the business. For example, the decision to outsource some or all of the IT operations is an important business decision. The result of a successful outsourcing operation can yield cost savings as well as gaining a competitive advantage. Without the proper metrics in place, the decisions to outsource may be misguided and subsequently mismanaged.

IT staffers are seldom focused on the value the initiative will deliver—not because they don't want to, but because they are not brought into the conversation about the value of the software to the business. Collaboration is the key. If the IT team is provided with ongoing information from the business unit on the expected economic value that is to be delivered from a project, their decisions throughout the software development lifecycle can stay focused on the target economic outcomes.

The ultimate value of measuring IT often comes from the dynamic caused by the measurement activity itself which focuses our attention on where we can deliver value to the business more effectively. The business value metrics, mentioned below, serve to improve a CIO's ability to gain knowledge regarding how to better manage risk and optimize performance.

Software measurement programs have reached a certain degree of maturity and can now provide data points used to effectively manage software projects with fairly well-defined estimates and measures of productivity and quality. But do these same project management-based metrics provide data that speaks to business value?

IFPUG'S Business Applications Committee (BAC) mission is to contribute to C-level and management decision-making using a quantitative approach. The function of the BAC is to encourage and support the development and definition of standardized metric-based business practices utilizing a unit of size based on IFPUG sizing standards. A selection of these metric-based business practices will be documented in an upcoming publication, *Business Value Metrics.* The main purpose of this publication is to provide mid- to senior-level managers with insights to measurement practices that provide opportunities to more effectively communicate business value to C-level management.

Business Value Metrics presents key measures and measurement practices typically used within IT but positioned to provide valuable data to the business. Measurement of software development is relatively easy to do but the business value of measuring software development has not been as widely recognized as it should have been. The insights provided here

can serve as a guide to CIOs and CEOs alike.

There are seven unique topics presented in the *Business Value Metrics* white paper that serve to directly or indirectly provide greater insights as to how IT managers can better manage from both a software developer's perspective as well as a business perspective. They cover a variety of measurement practices making use of lessons learned from software measurement practitioners.

Here is a summary of the topics planned to be covered in *Business Value Metrics.*

Managing IT performance explores the use of performance measures to better understand opportunities for improving the development and the delivery of software. The objective is to gain insight regarding current levels of performance in contrast to industry benchmarks thus highlighting potential areas of improvement that can reduce time to market, lower costs and improve product quality.

> " **Identifying early warning signals in the early stage of a project is an important step for project success.**

Benchmarking to industry standards is the activity of comparing a project or an organization's performance against its peers in the industry. A benchmark may focus on one or more of these business value areas: Cost; Schedule; Quality; Effort. The results enable the organization to see where it stands compared to its peers and may identify areas in which it excels or areas it should focus on to improve.

Improving the internal decision-making process used by an organization is about the defining of processes which are critical for the decision to be made. The decision-making model consists of six relevant steps which can be interpreted. The six steps start with the identification of the goal and end with the review.

Measuring the Voice of the Client (VOC) should be something that is done repeatedly. It is important to remember that the Voice of the Client can be broken up into both the Customer Survey that can be quite subjective as well as the most important Performance Indicators of measure of service that is directly impacting the Client (Service data). One of the most common failures on Voice of the Client is the lack of feedback to

clients and responsiveness to any process improvement or lessons learned. It is as important to follow up on the result as it is to gather the result.

The section on Value Stream measures provides a look at measures that "speak" to the needs of the business. Software is an integral part of the business. It is all well and good to learn and to understand your level of performance using industry standard measures such as defect density, your rate of performance or a cost per function point. But what value does that provide to the business?

Identifying early warning signals in the early stage of a project is an important step for project success. Despite the availability of numerous methods and tools to assist project managers, still the harsh reality is that vast majority of projects experience failures. According to recent research by KPMG (KPMG 2013), an incredible 70% of organizations have suffered at least one project failure in the prior 12 months and 50% of respondents indicated that their project failed to consistently achieve what they set out to achieve.

Retrospective Analysis provides valuable insights as to how Agile principles best serve the software development and business environments. The concern and commitment in the Agile world for the generation and delivery of value is evident. Many of the principles that revolve around this work philosophy are based on an intangible concept that inevitably and on many occasions is exposed to subjective criteria.

For more information regarding the Business Application Committee, please contact Pierre Almén, Committee Chair, at pierrea@coolmail.se.

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ABOUT THE AUTHOR

David Herron is an authority in the areas of performance measurement, process improvement and functional size, among others. For decades he has been an IFPUG unconditional servant: IFPUG MetricViews editor, chair of the IFPUG Management Reporting Committee, member of the IT Performance Committee, member of the Communications and Marketing Committee… He has put in practice in a huge number of entities, from different parts of the world, the use of metrics to monitor the impact of IT on the business, in governing outsourcing contracts and has brought the name of IFPUG and its concepts and added value to the highest levels. He was one of the founders of the David Consulting Group and has provided consulting and coaching services for a high number of IT companies. He has been presenter in a number of IFPUG conferences, with topics such as "Identifying Your IT Organization's Best Practices," "The Need for Auditing Your Measurement Program," "Early Lifecycle Identification of Software Quality Risk Factors," "The Lighter Side of Software Measurement;" author of a number of articles and co-author of different books such as *Measuring the Software Process: A Practical Guide to Functional Measurements* and *Function Point Analysis: Measurement Practices for Successful Software Projects*

A VOLUNTEER'S JOURNEY TO PRESIDENCY

By: **Christine Green**

International Function Point Users Group (IFPUG) is a nonprofit professional organization for technical professionals involved with software development. Many of its members, me included, have decided to work as volunteers for the organization. I'd like to take this opportunity to share my journey from one of many volunteers to the Presidency of the IFPUG organization. My goal in sharing this journey is to explain the many benefits that I have accrued, and how companies that encourage professionally related volunteerism benefit as well.

My first encounter with IFPUG occurred by attending a conference arranged by the organization back in 1999. I have often contemplated that it could have been any organization, any conference, but it was IFPUG from the very beginning. At the time, I was a relatively new employee. I was interested in obtaining additional information on estimating and controlling projects outside the typical framework of "we are doing fine" or "we are right on budget." How could we measure, estimate, and size our work to get a good solution? How could we control the scope, negotiate with the client, and create more accurate and reliable estimates?

Before the conference I had read David Herron and David Garmus' book *Measuring The Software Process: A Practical Guide to Functional Measurements,* and got a signature at the conference in my book—I felt like a young fan meeting my idols.

I was buzzing with energy and new ideas when I came home from this first conference. Suddenly, I was part of an extensive network of contacts inside and outside my current company. It was a blast for me both on a personal and a professional level. The knowledge and experience in Project, Process and Scope Management were out of the ordinary—and the networking taught me more within a few days than any training would have managed.

I was fortunate enough to continue to participate in IFPUG conferences, and in 2003 was invited to join one of the IFPUG committees that dealt with software project benchmarking and estimating. My journey with volunteerism had begun.

During my first years as a volunteer, I was lucky to work with great people with large knowledge such as David Herron. Together

with David Herron and the chair of the committee, Dan Bradley, I participated in an update of the IT Performance Committee workshop about Benchmarking and Measurement in an organization. I attended this workshop several times during the next period of IFPUG conferences. Now I combined learning with giving to the other participants in IFPUG conferences.

In 2006, I became the vice-chair of this committee. From 2008-2010, I was the leader of a project that developed a new process that was released into the industry—*The Software Non-Functional Assessment Process* (SNAP). Today this model is both ISO and IEEE recognized.

Again, networking and knowledge sharing significantly contributed to my daily work success.

In 2011, I was elected to the IFPUG Board of Directors for the first time. And in the period of 1 November 2019 to 1 November 2021, I was the President of IFPUG. During my time on the board, I have learned so much about leadership, conflict solving, mitigation and board participation. I always had excellent mentors who I could lean on to help me navigate at the top of an organization like IFPUG.

Why would someone like me become engaged as a very active volunteer in a nonprofit organization? Why do I use around six evenings a month on conference calls with peers who are as nerdy as I am? Why do I get support and sometimes even funding for participating in these activities from my employer? What benefits do my direct managers see in this?

There is no doubt about it. I am now a known resource in my industry, not just within my company. Clients, competitors, and benchmark vendors have often heard my name before I join a meeting. That makes it a lot easier to communicate the knowledge I have at any level, and the clients have respect for my input, even when I disagree with them.

Let's face it, things like Board titles, presentations at conferences, and, of course, rumour about knowledge gives respect on all levels. Many times, I see clients have checked my profile on LinkedIn before a meeting just to find out who I am.

Why employees should volunteer in industry organizations:

- Training on a very high level
- Networking outside of their company with peers
- Awareness of new methods early
- Influencing new methods
- Presentations at international conferences
- Sharing and gaining knowledge with and from other subject matter experts
- Cross-cultural awareness

Why would a company be interested in supporting these activities?

- Volunteers in industry organizations can influence the industry approach.
- Participants will be on top of the development, so no questions from clients will come as a surprise.
- Volunteers to share knowledge about new or improved industry approaches and processes.
- Company will gain insights into what both clients and competitors are interested in.
- Company gets a resource that is trained and experienced in management on a high level.
- Volunteers can market the company for all the good things it can do.

The final and best benefit is that I enjoy myself. I get to meet with others with the same nerdy approach to life that I have, and I get to know people from all over the world.

Today I am the Immediate Past President of IFPUG and my time on the Board will likely end in November 2023. I am today making

a living as a senior adviser both within IFPUG and outside of IFPUG. I am already looking forward to becoming a volunteer again and participate as an active member in committee work. I am still learning and growing both personally and professionally by being a volunteer.

In closing, if you are a manager, I hope that you will encourage your employees to join nonprofit organizations for the benefit of your company and the employee. If you are an employee and you get a chance, take it; you will enjoy yourself and learn a lot.

ABOUT THE AUTHOR

Christine Green After more than 25 years of experience in the software industry, Christine Green now pursues her passion for more innovative, more cost-efficient and successful software services based on "get it right from the start" and thorough attention to process, performance and productivity.

Christine is devoted to enlightening and support customers, associates and companies about how to achieve Successful Software delivery. Learning and sharing lessons learned is an important part of Christine's vigor and vitality. In practice, she has lived this out by volunteering for international organizations such as IFPUG, PMI, ISBSG, and United Testing with previous or current board positions in IFPUG and ISBSG.

Christine has a substantial background in software providers, including EDS, HP Enterprise., GE Healthcare.

CERTIFICATION COMMITTEE

By **Daniel B. French, Chair**

The Certification Committee works daily to:

• Support IFPUG members to take the CFPS / CFPP (IFPUG FP) and CSP (IFPUG SNAP) exams.

• Assist IFPUG members in applying the CFPS CEP (Certification Extension Program) to maintain certifications without retaking the certification exam and evaluating their submissions for extension approval.

The committee has been especially busy this past six months and has several major accomplishments to report:

Our work with the Japan Function Point Users Group (JFPUG) and our partner Brightest has resulted in the successful launch of the CFPS/CFPP automated exam in Japanese language so that our Japanese members can now take the computer-based part of the exam and don't have to wait for December of each year for the paper version. Great job by JFPUG, the committee and Brightest for this achievement.

The committee has also successfully launched the development Certified SNAP Specialist (CSS) exam, and existing Certified SNAP Practitioner (CSP) holders can take the case study portion of the exam to become a CSS.

A dedicated Certification Extension Program will be applicable to this certification. The CSS CEP will also allow the certification to be renewed beyond its three-year validity, as is already possible at present with the CFPS certification.

Translation of the APM into Italian is being completed and the CSS/CSP exam will be offered in Italian as well.

The Certification Committee is also working with the Functional Sizing Standards Committee (FSSC) to develop a Simple Function Point (SFP) certification exam.

IMPORTANT INFORMATION: Those who lost their CFPS/CFPP certification due to impediments as a result of COVID during the period of June 2020 to June 2022, please contact IFPUG Headquarters as soon as possible by sending an email to ifpug@ifpug.org.

The Certification Committee is available to reassess the situation and possibly reactivate the certification retroactively upon payment of all outstanding membership and certification extension fees. All CEP certification documentation is also required.

A big thank you to all the members of the committee who, with their dedication, competence and professionalism, allow the achievement of these great results!

FUNCTIONAL SIZING STANDARDS COMMITTEE

By **Esteban Sanchez, Chair**

The Functional Sizing Standards Committee (FSSC) continues its journey to deliver value to the IFPUG community by maintaining the Counting Practices Manual and constantly producing guidelines to aid in the application of Function Points to emergent technologies. Our team of professionals has recently been augmented with new members from Italy, Spain and Colombia.

Our most recent publication, "Strategies for Measuring Function Points in Decoupled Kanban Development" is a masterpiece in the realm of Agile methodologies; the paper approaches the application of Function Points in Kanban with emphasis on value and process. A comprehensive case study is also coming soon on the topic of Mobile Applications. This will be a comprehensive work that illustrates the application of function points to a full mobile application with cloud backend. On the back burner, we also have papers on the topics of Machine Learning and System Clock.

The FSSC is a catalyst in the adoption and empowering of Simple Function Points (SFP). We have contributed to the revision and release of the manual and continue to support the ongoing mission by creating additional materials. Several of the artifacts we have under development will involve SFP. For example, we are developing a paper on the topic of SFP for Agile Software Development.

If you want to be part of the team that is making all these great things possible, just get in touch with us. Please complete the IFPUG Volunteer Form on the IFPUG website: https://ifpug.org/about-us/committees/volunteer

Our mission is to serve IFPUG and its members and we love to innovate. If you have feedback or suggestions for new projects, we definitely want to talk to you. Please kindly submit your comments to esanchez@galorath.com.

INDUSTRY STANDARDS COMMITTEE

By **Carol Dekkers, Chair**

The IFPUG Industry Standards Committee (ISC) currently includes several IFPUG leaders: Carol Dekkers, who is the U.S. National Body Representative (USNB) to the ISO/IEC software and systems engineering standards, and Steven Woodward, who is involved with the Cloud Computing efforts with NIST and is on the Canadian delegation to ISO/IEC software and systems engineering standards.

Our efforts over the past six to 12 months have been to continue to support the USNB standards development and our own ISO/IEC 20926 IFPUG 4.3.1 Functional Size Measurement Method. We have also supported the efforts of the IEEE Computer Society Standards Association in the development and standardization of the newly approved standard IEEE32430 Software Non-functional Assessment Process (SNAP) under the leadership of Talmon BenCnaan.

In the first week of June 2023, the ISO/IEC JTC1 WG6 plenary in Okayama, Japan will be held and the progression of the joint ISO/IEC/IEEE 32430 standard will proceed as a New Work Item within Working Group 6. Talmon Ben Cnaan will attend the meeting as an IEEE project editor; I will attend as a USNB representative and Steve Woodward will represent Canada.

Thank you to all of the members of the IEEE Computer Society Standards Association 32430 working group of more than 20 industry professionals from around the world who contributed expertise and guidance over the six months of review and revision. Special mention to Cinzia Ferraro and Talmon Ben Cnaan and working group members for your ongoing support of this work.

Steve Woodward continues his work in the Cloud Computing standards arena on behalf of both Canada and industry professionals worldwide. Thank you for your ongoing efforts, Steve.

PARTNERSHIPS & EVENTS COMMITTEE

By **Kiran Yeole, Chair**

The Partnerships and Event Committee (PEC) continues to arrange events for bringing our member base together for knowledge sharing and driving strategic partnerships for IFPUG.

Events:

ISMA20:

The purpose of International Software Metrics & Analysis (ISMA) Conference is to provide educational and networking opportunities to IFPUG members and software measurement professionals in general, by learning and sharing knowledge in the world of software measurement.

We successfully conducted the ISMA20 virtual conference on May 4 in collaboration with other IFPUG committees and the IFPUG board. ISMA20 featured the following four interesting sessions:

1. Metrics That Mean Something

2. Automating Functional Size Using the SW4SysML Profile

3. Validation of a Function Point Analysis

4. VAF or Not VAF? That's the Question!

The ISMA20 conference was approved as an eligible event for certification extension credits toward CFPS certification and enables 3 Technical PDUs in the PMI Talent Triangle® for those who hold the PMP certification.

Knowledge Café Webinars:

In this calendar year 2023, we have already conducted three knowledge café webinars, and we are planning a few more soon.

During the first webinar we conducted in this calendar year, in the month of January 2023, **Roberto Meli** (IFPUG board member and CEO of DPO Srl (Italy)) presented the topic "Simple Function Points—From Tradition to Innovation" and walked us through the main characteristics and structure of the new IFPUG Functional Size Measurement Method (SFP), pointed out the differences/similarities between FPA & SFP and the PROs and CONs of using it in the real world.

During the second webinar, in the month of March 2023, **Sergio Brigido** (measurement analyst/consultant and IFPUG Executive Secretary and board member) presented the topic "FPA Rules Interpretations For Elementary Processes" and gave us further guidance in the interpretation and application of the "Elementary Processes Identification Rules."

During the third webinar, in the month of April 2023, **Luigi Buglione** (IFPUG board Member and working with DXC Technology as a measurement & Process improvement Specialist) presented the topic "Diversity & Inclusion (D&I) KPIs" and helped us to know the possible KPIs for achieving the D&I (or DEI) goals from a measurement viewpoint.

Partnerships:

As you know, IFPUG is advancing the partnership with the Netherlands Software Metrics Users Association (NESMA). As part of this, IFPUG announced the agreement with NESMA recognizing that we share specific objectives. IFPUG and NESMA have agreed to cooperate in overlapping domains of expertise, as well as mutual work on endorsement of the sizing standards, mutual development of content, facilitating professional networking opportunities and joint development and promotion of educational activities in software sizing, metrics and measurement.

As part of this partnership, IFPUG and NESMA have agreed to work together on the development of a new white paper on **"Functional Sizing in Lean and Agile Development Methodologies."** We believe that this joint work will benefit the entire measurement and sizing community to a great extent. We have formed the joint task force with members from both IFPUG and NESMA to work on this white paper.

We are hoping to publish the white paper in coming months post review from both the parties.

We regularly offer platforms for interesting topics to be discussed at our Coffee Talks and ISMA conferences. Please write to pec@ifpug.org with your suggestions for topics and speakers. If you are interested in working with the PEC, please complete and send a volunteer form to pec@ifpug.org or submit the form using https://ifpug.org/about-us/committees/volunteer.

COMMUNICATIONS AND MARKETING COMMITTEE

By **Julián Gómez, Chair**

IFPUG was proud to present the ISMA20 virtual conference on May 4, and fully embraced the fun theme of Star Wars throughout the great presentations which were offered during the conference. In the spirit of the event...

I want to warmly welcome all our Mandalorian brothers and sisters who come here today to read new issues from around the planet.

Benvenutti a tutti i fratelli e sorelle italiani.

Bem-vindos a todos os irmãos brasileiros e portugueses.

Bienvenidos a todos los hermanos y hermanas españoles y latinoamericanos.

Welcome to all our brothers and sisters from the United States, India and all the rest of the world, regardless of their place of origin, because Mandalorian is not a race, it is a creed. And they have embraced the IFPUG creed.

Our creed reads as follows:

"I swear on my name and the names of the ancestors... That I shall walk the Way of the Function Points... And the words of the Creed shall be forever forged in my Software Product heart. This is the IFPUG Way."

This is the Creed.

In our Communications and Marketing Committee tribe, I want to welcome the new Mandalorian volunteers: Carla Cioffi, Luca Marconero, Thiago Silva and Alessandra Ciolli. They will help us to spread the words of our Creed loud in this far away galaxy.

As Mandalorians in the Star Wars world, we are a community of brothers and sisters with the same principle: improve software development. We made what we made with this goal, and we collaborated to achieve it. It is a pleasure to serve with all of you in that rebellion to put the software product at the center of IT development.

This is the IFPUG way.

I have spoken.

If you were not able to participate during the live ISMA20 conference, you can view a recording of the event in the IFPUG Learning Center.

NON-FUNCTIONAL SIZING STANDARDS COMMITTEE

By **Fabrizio Di Cola, Chair**

The IFPUG Non-functional Sizing Standards Committee (NFSSC) continues its activities to explain to the industry what SNAP is, the benefits from its use, how to measure certain sizing scenarios and to train future trainers on SNAP.

Do you want to use SNAP in contracts and need a certification that has a renewal process, similar to the CFPS CEP? This way you can be sure that you have staff properly trained and ready to measure software non-functional user requirements related to SNAP non-functional requirements. IFPUG launched the Certified SNAP Specialist (CSS) certification, which will complement the existing Certified SNAP Practitioner (CSP). This will help you introduce non-functional measurement from a contractual perspective as well. So, you are only a short time away from having the opportunity for this certification level. During this period, together with the certifications committee, the NFSSC prepared and illustrated the first valid CEP presentation for CSS at GUFPI's first "metric event" in Italy.

In a short time, the SNAP manual will be released in a new language: Italian! And it doesn't end here, because by summer the CSS certification will also be translated into this language to cover the needs of the Italian market.

Summarizing these and other important activities done during this period include the following:

• The translation of the APM into Italian is near to be ready!

• The writing of a new white paper that will give guidance on how to apply SNAP applications built with microservice architectures.

• We are involved in the Simple Function Point Task Force for anything that falls under the responsibility of our committee.

• We are finalizing an important white paper on measuring security requirements.

- We will prepare what we presented as the first CEP for CSS: in fact, we are preparing an iTip on measurement with SNAP in Zero Function Point projects. In particular, we have focused and will focus on technology migrations.

- Our first five YouTube videos overviewing the SNAP method have 596 views as of this writing. We encourage you to access these by either searching YouTube by "IFPUG SNAP," by "non-functional software sizing," of something similar. Please "Like" them if you do.

We ALWAYS need your help. Working in the NFSSC allows you to be in contact with the best professionals in the measurement of non-functional requirements for software, know the background of the choices you will later apply in your companies or talk about in universities. The measurement of non-functional dimensionality in software is absolutely one of the hottest topics in the industry in recent years. For those interested in working with us on a groundbreaking topic such as non-functional dimension measurement with SNAP, you can send your application by going to https://ifpug.org/about-us/committees/volunteer.

If you would like to contact us, you can do so at nfssc@ifpug.org.

INTERNATIONAL MEMBERSHIP COMMITTEE

By **Loami Xavier de Barros, Chair**

The International Membership Committee (IMC) is proud to announce two new members!

- Camila Laruccia will be a representative for South America supporting the countries that speak Spanish.

- Cristiane Baccarin will be the new Brazil representative whose primary language is Portuguese, replacing myself on this task. I will continue as the IMC Chair for all the regions.

Welcome Camila and Cristiane to the IMC team!

The IMC is currently responsible for:

- **Member Support & Translation:** We have been acting as the primary point of contact for related queries and engagements from non-English speaking IFPUG members so that they continue to benefit from their memberships.

- **Academics Affairs:** A task force will collaborate with universities and colleges around the world that use Software Estimations/Function Points in their curriculum.

- **Simple Function Point Manual:** We are verifying if the translation group is following all the procedures specified. Italy, Japan, China, Brazil and Spain translation teams are currently working on on this task.

- **Volunteer Process:** We are involved in all process steps between potential volunteers and committee chairs.

- **Membership New Structure:** We are currently exploring possible new IFPUG membership structures more adapted to the new communication technologies demands.

We are more than eager to assist you with all IFPUG-related queries. Feel free to send us your IFPUG improvements and suggestions.

Currently, we have representatives for France, Spain, Brazil, South America/Brazil, China, India and Italy, but Malaysia no longer has an active representative. The IMC is looking for an enthusiastic Malaysian country representative too. Additional country representatives are more than welcome; let us know if you want to represent your country and be part of our team.

Please access the IFPUG Volunteers page if you would like to participate of IMC or other committees at https://ifpug.org/about-us/committees/volunteer. Join our team and become an IMC country representative!

BUSINESS APPLICATIONS COMMITTEE

By **Pierre Almén, Chair**

The purpose of the Business Applications Committee (BAC) is to help C-level and senior management, using facts like quantitative metrics etc., improve their decision-making process. For example, this can include business-based measures such as: value-based contracting, estimation, cost prognosis, benchmarking and outsourcing analysis.

The committee is quite new and started by the members who created and implemented the Application Development & Maintenance (AD/M) Benchmarking Certification. The task we now are focusing on is the creation of a follow-up to the document Function Points as Assets with the working name Business Value Metrics. The committee consists of highly qualified members from different parts of the world, and they have years of business and IT experience. Each member has created a chapter and now we have to reduce the content to a document size that can attract C-levels. After that we can create separate white papers or similar using the full content of each chapter.

One more prioritized committee activity is to update the Application Development & Maintenance (AD/M) Benchmarking Certification for renewals and train more members in its processes.