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MetricVIEWS

A PUBLICATION OF THE INTERNATIONAL FUNCTION POINT USERS GROUP

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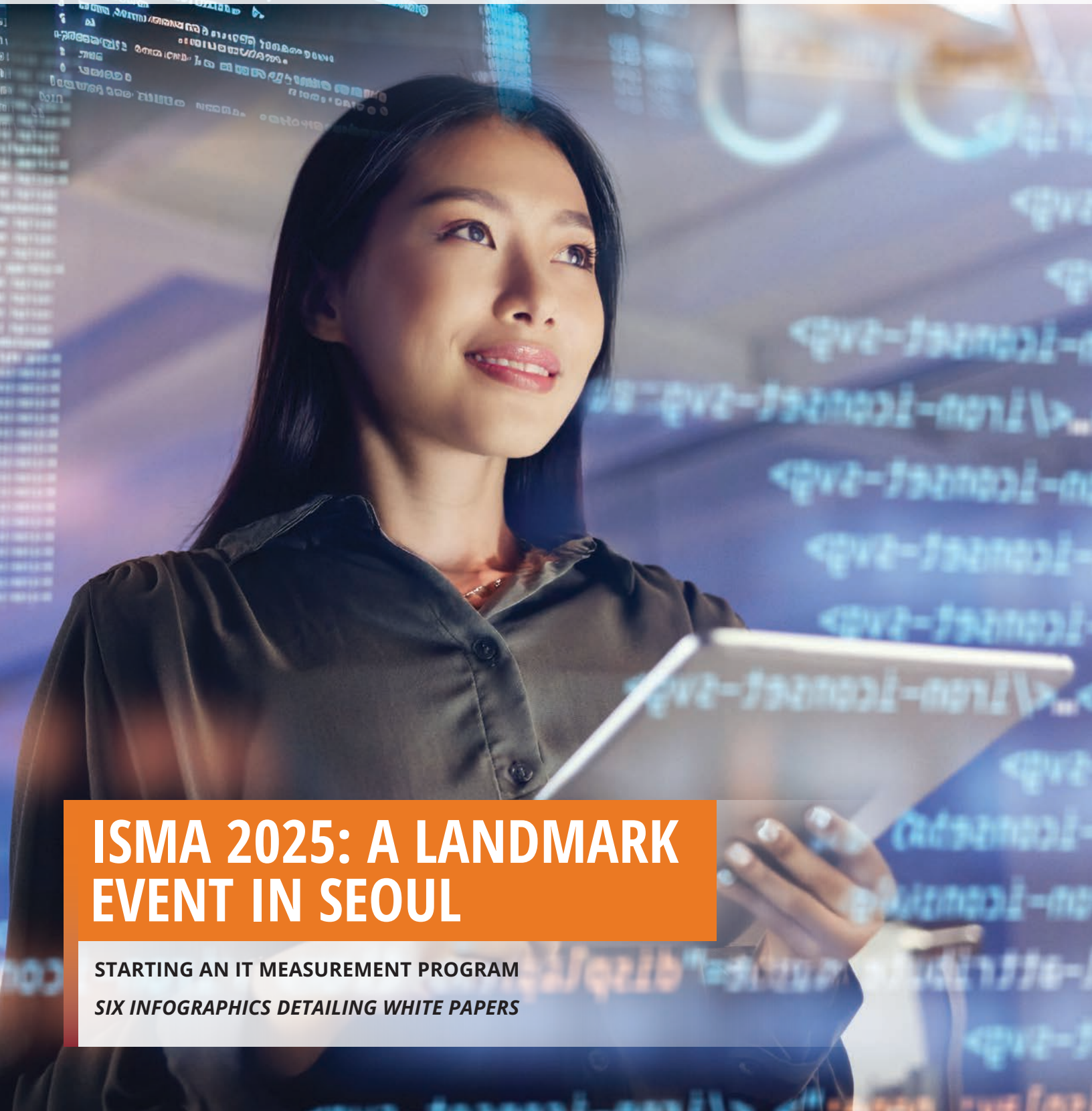

ISMA 2025: A LANDMARK EVENT IN SEOUL

STARTING AN IT MEASUREMENT PROGRAM

SIX INFOGRAPHICS DETAILING WHITE PAPERS


IFPUG
International Function Point
USERS GROUP

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IFPUG is committed to publishing timely articles related to function and non-functional software measurement in every issue of *MetricViews.* While each article is reviewed for relevancy and clarity, articles, especially those that are innovative and thought-provoking, are not necessarily endorsed by IFPUG.

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An Invitation to Shape the Future of Software Measurement: Join IFPUG Committees & Share Your Success Stories

Dear IFPUG Members,

I hope you are doing well and thriving in your professional journeys. As we continue strengthening IFPUG's global role in software measurement, I want to extend a personal invitation to each one of you to become an active contributor to our community's future.

IFPUG has always been built on the passion, expertise, and collaboration of its members. Today, more than ever, we need your voice, your experience, and your leadership. Whether you are a practitioner, consultant, researcher, educator, or organizational leader, your participation can make a meaningful difference.

Join an IFPUG Committee

Our committees—ranging from Functional Sizing Standards, Non-Functional Sizing (SNAP), Communications & Marketing, Education, Conferences, and more—play a vital role in advancing our mission. These committees are where ideas evolve into standards, where best practices are shaped, and where the next generation of measurement professionals is inspired.

By joining a committee, you will:

• Contribute to the evolution and global adoption of Function Points (FP) and SNAP.

• Collaborate with international experts and thought leaders.

• Expand your professional network and visibility.

• Stay at the forefront of emerging trends such as AI-driven estimation, automation, benchmarking, and productivity analytics.

• Influence the strategic direction of IFPUG and the industry at large.

Your time, whether small or significant, can help IFPUG grow as a global authority and collaborative hub for software sizing and estimation.

Share Your Success Stories – Inspire the Community

We also encourage you to share your stories of how Function Points and SNAP have created value in your projects and organizations. Your experiences—whether improving transparency, supporting fair pricing, optimizing budgeting cycles, enabling predictive analytics, or enhancing software quality—can inspire others around the world.

We are eager to highlight these stories through:

• Blogs and case studies

• Webinars and knowledge-sharing sessions

• Conference presentations

• Social media spotlights

• Member newsletters

Your success is the community's success. By sharing your journey, you help demonstrate the impact of quantitative sizing in today's digital and AI-driven landscape.

Together, Let's Strengthen the Future of Software Measurement

IFPUG stands at an exciting moment. With rapid advancements in AI, automation, and global digital transformation, the world needs reliable, unbiased, and standardized methods to measure and estimate software more than ever. By participating, you help ensure that our standards remain relevant, modern, and globally adopted.

If you are interested in joining a committee or submitting a success story, please write to ifpug@ifpug.org.

Thank you for being part of the IFPUG family. I look forward to your active participation and leadership.

Warm regards,

Saurabh Saxena
President, IFPUG

Why CFPS Matters for Your Career

CFPS certification is not just a credential. It is a statement. By earning your CFPS, you demonstrate advanced expertise in Function Point Analysis, a commitment to quality and accuracy, and the ability to apply objective measurement to real-world software initiatives. This certification signals to employers, clients, and peers that you have mastered the fundamentals of FPA and can apply them with precision, consistency, and confidence.

With global recognition and growing industry demand, CFPS certification positions you as a leader in the metrics community.

Ready to prove your expertise? Apply for CFPS certification today

"When the winds of change blow, some people build walls and others build windmills." This Chinese proverb reminds me of the five stages of technology adoption: Innovators, Early Adopters, Early Majority, Late Majority, and Laggards. The content of this *MetricViews* issue characterizes both ends of this spectrum. "Counting" since 1979, Function Point Analysis has been in use for more than 40 years. As 2025 comes to an end, no organization would be considered an Innovator of Function Points. Charley Tichenor and Pierre Almén offer insights in their article, *Starting an IT Measurement Program*—sage reading for the Early Adopter in an organization that may be lagging in software measurement. They strive to accelerate organizations venturing into software measurement using Function Points, benchmarking, culture, standards, and improvement through the use of DMAIC.

By contrast, proponents of artificial intelligence (AI) might consider themselves Early Adopters, though caution is warranted. AI's theoretical introduction in 1956 might classify today's AI pursuers as the *Early* or perhaps even *Late* Majority. Perhaps I'm being kind to focus on AI's recent expansive exploitation, conceding also that AI preceded Function Point Analysis by more than 20 years. If that comparison *labels* us as AI Laggards, then so be it.

I'd rather think of our application of infographics in this issue as the work of Innovators. Oops, the developers of Mesopotamian cuneiforms, and the Egyptian's use of hieroglyphics as pictograms might posit otherwise. Trying to cast more accurately this one more time, employing infographics with Function Point Analysis, SNAP, and AI might give us a more legitimate claim as Innovators. The credit in this instance, filling many of the pages of this issue, is the brainchild of Julián Gomez.

Together, Charley and Pierre's article and Julián's AI-generated infographics offer both a path for software measurement implementation as well as pictorially-aided representations of several critical concepts related to function point analysis and measurement in general. Novice and seasoned, text and visual, Innovators and Laggards alike have much to sample in this *MetricViews*.

As with every issue, I extend my thanks to the authors for their thoughtful ideas and to CMA for their contributions to the content quality in *MetricViews*. Along with our President's message and updates from our geographically diverse committee members, we're highlighting the *international* and *users* in IFPUG.

Be well, stay well.

Joe Schofield
Editor, Past President, Honorary Fellow

ISMA 2025: A Landmark

By: Kiran Yeole

On September 25, 2025, Seoul became the epicenter of global software measurement innovation as the International Software Measurement & Analysis Conference (ISMA 2025) successfully concluded. Organized by IFPUG in collaboration with KOSMA, the event brought together industry leaders, practitioners, and academics to explore the future of software metrics in the age of AI.

Highlights of the Conference

- **Theme:** *"Beyond Limits: Unlocking IT Power with Smart Metrics"* set the tone for discussions on how measurement frameworks can drive AI adoption and digital transformation.
- **Key Sessions:**
  - *Estimating AI Agents Using Function Point Analysis* – **Roopali Anand Thapar**
  - *AI Superpowers to Enrich Software Development (Sponsor Presentation)* – **Julián Gómez**
  - *Functional & Non-Functional Measurement of AI-Powered Chatbots* – **Saurabh Saxena** and **Sushmitha Anantha**
  - *Software Measurement in Korea: Two Decades of Efforts and Future Strategies* - **Yoonseok Lee**
  - *How to Apply Requirements-Based Function Point Analysis Methods in Public Software Development Projects in Korea* - **Heungshik Kim**
  - *Review of Function Point-Based Project Sizing in Public Project Supervision: Current Status and Improvement Proposals* - **Bonghyun Jo**
  - *Issues and Solutions in the Use of Function Points for IT Audits in the Korean Public Sector* - **Hyunjin Roh**
  - *A Must-See Perspective on User Views in a Function Point World: Preparing for the AI Era* - **Yong-goo Lee**
  - *FP Based SW Repository in Public SW Development & Operations* - **Jongsung Kim**
- **Global Participation:** Delegates from across Asia-Pacific and beyond joined both in-person and virtually, making ISMA 2025 a truly hybrid and inclusive event.
- **Professional Development:** Attendees earned CEP credits and gained insights into practical applications of FPA, SNAP, Agile, and DevOps metrics.

Event in Seoul

Key Statistics

- **Total Participants:** ~275 (in-person and virtual combined)
- **Total Presentations:** 10 sessions
- **IFPUG Speakers:** 4 presentations (covering AI sizing, SNAP, Agile metrics, and chatbot measurement)
- **KOSMA Speakers:** 6 presentations (focused on public sector projects and regional best practices)

Impact and Takeaways

ISMA 2025 reinforced the importance of smart metrics in enabling transparency, efficiency, and innovation in software development. The collaboration between IFPUG and KOSMA showcased how global and regional expertise can converge to address emerging challenges in AI-driven environments.

The event not only advanced technical knowledge but also strengthened the global measurement community, paving the way for future collaborations and research.

We extend our heartfelt gratitude to KOSMA, all in-person and virtual attendees, speakers, sponsors, the organizing team, IFPUG committees, and the Boards of IFPUG and KOSMA for making this conference a resounding success.

Preparations are already underway for our next hybrid event, ISMA 2026. Stay tuned for details to be announced soon on the IFPUG website.

STARTING AN IT MEASUREMENT PROGRAM

Charley Tichenor (Author)
Pierre Almén (Reviewer)

On Behalf of the IFPUG
Business Applications Committee

INTRODUCTION

Suppose you are newly hired into a software development organization. After being there for a while, you recognize that the prices paid for software development contracts are based on negotiation and based on cost per hour without knowing what will be delivered each hour, that numerous software development programs overshoot their target completion dates, that software development programs are staffed by means other than workload because the workload is poorly estimated, there is no real metric for software quality, and many other things that could be improved. The purpose of this article is to give you some guidance from the Business Applications Committee's experience to help your organization to improve its software management process.

There are many skills that you will need along the way to help implement a software metrics program to address the issues in software development. Here is an overview, but more detail will come later. You must have at least a thorough introductory knowledge of software sizing. We will focus on IFPUG function points, an international standard used to measure software size (ISO 20926:2009), and methods in this article in the interest of time, but much the same philosophy applies to IFPUG's SNAP (ISO/IEC/IEEE 32430:2025), and Simple Function Points. You will need to assess your organization's culture. You may consider borrowing some of the Lean Six Sigma practices' common knowledge to ensure that your program will have support from your "chain of command." You will need to be a good group facilitator. Also, you will need access to someone who has statistical analysis ability at about the second course of statistics level for the resulting analytics. Your organization may have a Lean Six Sigma Black Belt, or an Operations Research analyst, who can assist you if necessary.

TECHNICAL KNOWLEDGE

To start a software sizing program using function points, you will need a solid introductory foundation of its technology, although you do not need to be certified. Make that a goal for later after you have had practice counting a number of projects. One good place to start your learning is by taking a course offered by function point vendors, especially those who advertise in *MetricViews*, present at IFPUG ISMA conferences, present at IFPUG webinars, etc. Often these introductory training courses can be completed online face-to-face with an instructor at your convenience. These are 8–16-hour courses and will prepare you well; just make sure that these are IFPUG function point courses, as other types of function points exist.

Either join, or ask your organization to join, IFPUG. You will have free access to what now amounts to a library of more than 60 technical manuals, white papers, webinar presentations, and conference presentations. Also, the current and back issues of *MetricViews* are on the IFPUG web page under "Learning and Events" for members and non-members. Download these onto a flash drive for your personal library and make sure to include the following:

- The "Function Point Counting Practices Manual" (CPM) [IFPUG 2009] for sizing functional software.
- The "Software Non-functional Assessment Process (SNAP) Assessment Practices Manual" (APM) [IFPUG 2015] for sizing non-functional software.
- The "Simple Function Point (SFP) Counting Practices Manual" (SFP) [IFPUG 2021], for estimating functional size.
- "Analytics of the International Software Benchmarking Standards Group (ISBSG) Development and Enhancement Repository," [IFPUG 2022] which contains a wealth of analyzed data from the industry in this 61-page white paper.
- "IT Value Metrics—Key Enablers of the Business," [IFPUG 2024] which provides seven short chapters of detail on how software sizing can add value to the organization.
- "Function Points as Assets," [IFPUG 1992] which provides numerous useful software metrics and how to calculate them.

You may have to make special arrangements with your IT department to place these and other IFPUG documents on the organization's computer system for cybersecurity reasons. But you can certainly put these on your own flash drive or print them out and take them to work. Start reading them, and your technical knowledge will grow immensely as these were produced by some of the top experts in the software metrics industry. You are always welcome to forward questions to or ask for an online conference with a member IFPUG. Email ifpug@ifpug.org and the front office will forward your request to the appropriate committee, and they will respond quickly.

As a sidebar, there are differing opinions for using the General Systems Characteristics (GSCs). These are non-functional. According to the ISBSG data, over recent years fewer projects have been counted using the GSCs and as of 2022 very few ISBSG projects are reported using the GSCs. Consider using them if they give you a stronger statistical correlation, which some organizations find. Or you may use the Modified Value Adjustment Factor [Al Harrack, et. al. 2020] if that results in a better statistical correlation. Although approved by IFPUG, they are not ISO standards and using the ISO standard SNA for sizing most non-functional software is recommended.

ORGANIZATIONAL CULTURE AND SELLING THE PROGRAM

Culture can be defined as a way of life for a group of people. Cultures certainly can vary among countries. They also vary among organizations, and even among subgroups within a single organization. It is important to step back for a while to learn the culture of your organization, and the culture of your subgroup within the organization's culture.

To implement a new process like software measurement and metrics, two things are critical. First, the methodology must be sound. IFPUG function points are sound. The methodology is recognized internationally by ISO standard ISO/IEC 20926:2009. (SNAP is also internationally standardized, by ISO/IEC/IEEE 32430:2025.) Second, you must sell it. Arguably, in practice the soundness of the methodology will likely account for no more than 49% of your ability to start the program; at least 51% of your ability to start the program will be your ability to sell it.

After understanding the various cultures that will interplay with your proposed function point program, you will be the primary person responsible for convincing the decision maker to adopt it. What value software metrics can bring to an organization can be found in the IFPUG white paper "IT Value Metrics – Key Enablers to the Business," and IFPUG's "Function Points as Assets" as a backup, as a start. The first-level decision maker will be most likely your supervisor. If your supervisor is the CIO, you may not have to consider higher levels in the organization. If your supervisor is not the CIO, then you need to provide a plan to sell it to the decision maker. You need to develop a presentation explaining the function point methodology to executives. Expect to have 15 minutes of their schedule to sell the program as time is a scarce resource to them. Provide them with the white paper "IT Value Metrics – Key Enablers to the Business." This white paper describes how software sizing can add value to their organization. It has seven chapters of about four pages each. These chapters can be read in any order, and some may be skipped if that information is not needed.

You have some homework to do.

- You will also need to develop a one-hour presentation for explaining and selling the function point program to a project team audience. This overview can be presented a day or so before the counting starts so that the project team has time to do their homework before counting starts. For example, they will likely need to print out their database structure and bring that to the count.
- Finally, you will need to build a spreadsheet for logging your counting information. How you build it is at your convenience.
- It is helpful to have cells for the name of the project, the project representative, telephone number, office symbol, counter name, and starting date of the count.

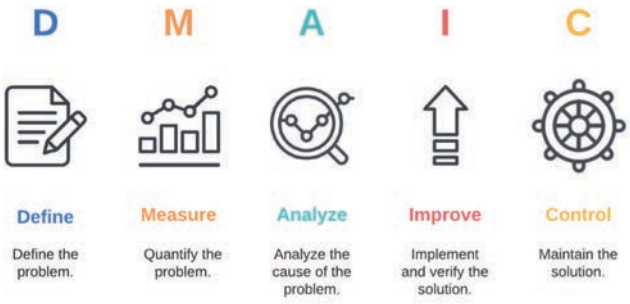
- You could have one wide column to name the counted item of interest, such as ILF x. Next to that could be five columns (ILF, EIF, EI, EO, EQ) and enter the corresponding cells the number of each item, such as 3 EIs. The next column could be for entering L, A, or H depending on the item's size.
- The next column could calculate the corresponding function points using logic formulas to automatically calculate those function points. This will greatly speed up the counting time. And have a cell that totals the function points.
- Also have a cell that has the work effort used for the project. Another cell might be the calculation of function points/work effort the project's delivery rate.

IMPLEMENTING THE PROGRAM

Borrowing from Lean Six Sigma common knowledge but using layman's terms, a successful implementation of a software metrics program will need several people who "buy into" this type of metrics thinking. The first is executive leadership, who could be the CIO or a designated representative. Lean Six Sigma calls this person the "Champion." This person has the authority to implement and oversee the program and owns the program's vision. The Champion allocates resources such as function point counters, members of software development projects who will work with the function point counters, etc., and removes barriers including organizational silos. This person ensures that the program both adds value to the organization's strategic plan's return on investment and improvements across its value streams. This person implements and controls the resulting change.

Your responsibility is probably leading the day-to-day program operation. You schedule the counting, collect and analyze the collected metrics data, and ensure communications appropriate for your level in the organization. You ensure that the Champion (and your "chain of command") is well-informed.

Here are the five steps of a typical Lean Six Sigma process improvement initiative. This process is called "DMAIC"—define, measure, analyze, improve, and control.



https://cdn-cashy-static-assets.lucidchart.com/marketing/blog/2017Q4/dmaic-process/DMAIC.png

Suppose the decision maker needs to know if the software project delivery rate has an improving trend—this is the definition of the problem (initiative). You recommend a way to measure software development productivity over time. Going into "Function Points as Assets" (page 13) you can recommend to the decision maker that the project delivery rate needs to increase as more projects complete over time if productivity is improving, i.e., more function points per work effort unit are being delivered over time. The metric here is function points/work effort.

The associated measurement process would be for you to lead a team to start sizing completed projects and gathering the data associated with the work effort per project. The team might include yourself, and maybe another counter, to do the counting and answer questions. Schedule a training session using your one-hour presentation with members of the project team. This will ensure that they understand the foundations of the methodology. Explain to them how you intend to proceed with the counting, for example, your style may first count the ILFs. Ensure that they know you will have the Counting Practices Manual with you during the counting for reference. Have a representative from the database team present when sizing the ILFs—do not rely on data table names and try to determine the ILFs yourself. You will need the database team representative to explain the nature of the data tables (for example, countable tables/ILFs vs. code data tables) and obtain the buy-in from the database team member that the count was fair. The same goes for other team members who will explain the EIs, EOs, EQs, and EIFs. For example, sometimes it is hard to distinguish an EO from an EQ by just looking at a screen or reading documentation. Always go through the entire application screen by screen, or report by report, and examine the printed layout of the database structure with an appropriate team member.

The best function point counters enable a count on which they and the project team agree for roughly 97–98% of all decisions. Do not expect perfection. Also, don't forget the great number of IFPUG-approved white papers that have been specifically written to interpret difficult situations. You may use those as references if you and the project team agree. If an unresolved difference remains, feel free to send an email to ifpug@ifpug.org and the front office will forward your question to the appropriate committee for quick resolution.

The analysis phase results in determining the productivity rate trend. Start by measuring several small projects and build your technical, training, sales, and facilitation skills. Then go on to larger projects. Make sure you spread the project completion dates over a long enough period as required by the decision maker and get a good variety of software sizes to promote randomization. Also get the associated work effort used to develop each project.

Being an IFPUG member, you can compare productivity, etc. with similar projects for free in the ISBSG project database by using their tool PDQ. As an IFPUG member, you can also buy the complete repository (now data about 13,000+ software development projects and data about 2,000+ applications) at a substantial discount.

The decision maker is the customer of the analytics. But the analytics will probably include a linear regression statistical trend analysis. Be sure to use linear regression through the origin. In Excel, set the intercept at 0. The reason for linear regression through the origin is that if, in theory, a project had zero function points, then no work effort would be allocated to developing that project's functionality. (It is possible to have zero function point projects, usually enhancements, in which case SNAP would be used to size that non-functional software.) The more projects included in the regression analysis, the better confidence in the resulting calculated trend. Try to get at least 30 projects in the regression. With fewer than 30, the margin for error in concluding statistically a trend line gets larger and reliability decreases. Also try to get several very small projects to enhance the regression.

The ultimate responsibility for analyzing the root cause of the problem, improving the process, and controlling it is that of the decision maker, although you may be asked to help.

CONCLUSION

These guidelines should help you start a software metrics program in your organization. Remember, selling the program accounts for at least 51% of your ability to be successful. Your technical knowledge and group facilitation ability to calmly and correctly answer questions and objections will also enhance your success. Start small, build credibility, keep your "chain of command" informed, and always sell the program. Also, consider using the ISBSG data repository to benchmark your organization's results; if possible, please send your results to ISBSG to help others benchmark their results.

REFERENCES

Al Harrack, Micheline; Sanchez, Esteban; Tichenor, Charley; "Using the General Systems Characteristics with the Software Non-functional Assessment Process (SNAP)," 2020, Section 3.4, IFPUG, 50 Millstone Road, Building 200, Suite 215, East Windsor, NJ 08520, USA.

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IFPUG 2015, "Software Non-functional Assessment Process (SNAP) Assessment Practices Manual," IFPUG, 50 Millstone Road, Building 200, Suite 215, East Windsor, NJ 08520, USA.

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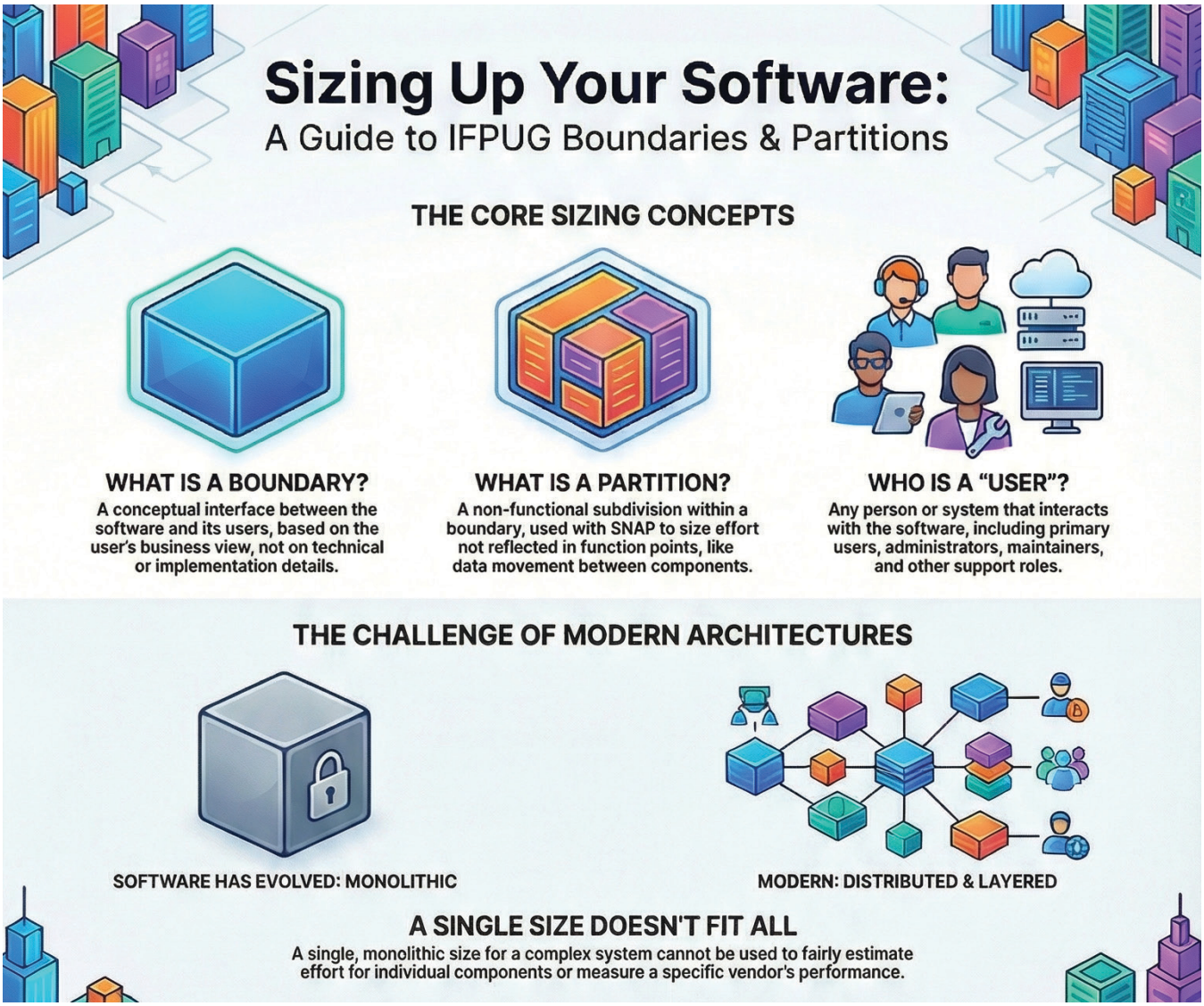
IFPUG 2022, "Analytics of the International Software Benchmarking Standards Group (ISBSG) Development and Enhancement Repository," IFPUG, 50 Millstone Road, Building 200, Suite 215, East Windsor, NJ 08520, USA.

IFPUG 2024, "IT Value Metrics -- Key Enablers to the Business.," IFPUG, 50 Millstone Road, Building 200, Suite 215, East Windsor, NJ 08520, USA.

ABOUT THE AUTHOR

Charley Tichenor has been a member of IFPUG since about 1993. As a function point team leader, he and his team counted more than 1,000 new development and enhancement projects over a multi-year period. He was twice certified as a CFPS, and either authored or co-authored many IFPUG white papers, MetricViews articles, and ISMA presentations or webinars. He is now retired, and volunteers on the Business Applications Committee, the Nomination Committee, and is Vice-Chair of the Non-functional Sizing Standards Committee

Pierre Almén has been a member of IFPUG since about 1993 and in 1994 was the first in Northern Europe to be a Certified Function Points Specialist. He used this method internally at IBM since 1984 and at major well-known companies mainly in the Nordic region. Pierre has often been engaged as a Function Point trainer, as a support when starting to use the method, and as a counter and reviewer of Function Point counting result. Pierre is President of ISBSG (International Software Benchmarking Standards Group) since 2019 and Chair of the IFPUG Business Application Committee.



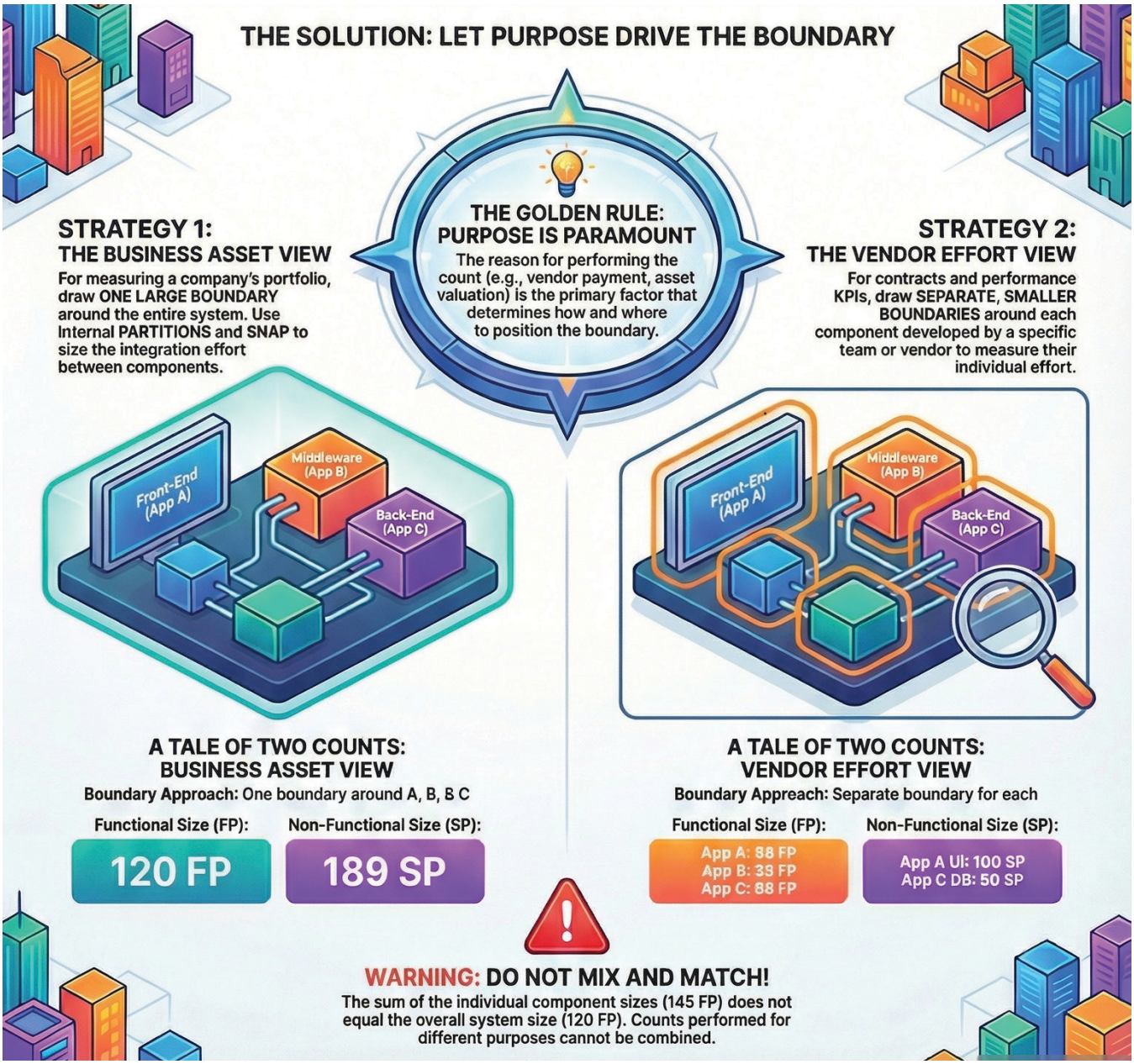
BOUNDARIES & PARTITIONS

Link to Learning Center:
https://ifpug.mclms.net/en/package/9642/course/18772/view

Setting the boundaries correctly has crucial importance in the sizing process. It affects the product size (both functional and non-functional), hence it influences effort estimation and the Key Performance Indicators (KPIs) of those sizing units. The setting of the boundary is influenced by the purpose of counting. Therefore, different guidelines should be applied for each sizing purpose.

The purpose of this document is, in part, to guide users of the International Function Point Users Group (IFPUG) functional and non-functional sizing methodologies how to set the boundary and partitions correctly; a partition is a non-functional subdivision of a boundary (to be discussed more fully later). It supports the IFPUG Function Point Counting Practice Manual (CPM) for IFPUG function points (FP), the IFPUG Software Non-functional Assessment Process (SNAP) Assessment Practices Manual (APM) for IFPUG SNAP points (SP) and Simple Function Point Counting Practices Manual for IFPUG Simple Function Points (SFP).

FPs were created to put the business and its needs at the center of the sizing process, displacing technical considerations. The focus is on the measurement of information functions delivered, not on the technical implementation. This approach keeps the sizing method consistent, repeatable (achieving the same results by different sizing experts), and independent of commercial forces.



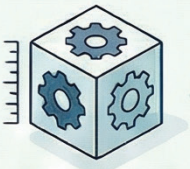
The same boundary rules and guidelines apply to FP analysis, SNAP, and SFP. SNAP and SFP use the same boundary as used for the functional sizing. Setting the partitions in SNAP depends on how the boundaries are set.

Proper placement of boundaries and partitions has important relevance in applications sizing. Setting the boundaries defines the interfaces between the analyzed software and its users. This affects the number and the sizes of its transactional functions and data functions. Shifting the positioning of the boundaries changes the counted size regardless of the functionality that is developed.

According to the CPM, the purpose of the count influences the boundary (CPM 4.3.1 Part 2, page 5-2). Counting the same system, but for different purposes, may change the counted size. Therefore, the purpose of the count must be agreed upon and well-documented. It is also important to understand that the sum of the FPs of various applications does not necessarily equal the size of the system that contains these applications. This can happen if the sizing of the system and the sizing of its applications is not done for the exact same purpose. This will also be discussed further later.

Measuring What Matters:
A C-Suite Guide to IT Value Metrics

THE FOUNDATION: STANDARDIZED SOFTWARE SIZING

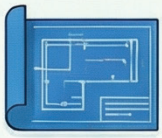


UNIVERSAL MEASUREMENT UNIT
+ STANDARD UNIT OF MEASURE

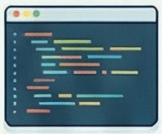
MILES PER GALLON
(Cost Efficiency)

COST PER
FUNCTION POINT

NORMALIZATION ALLOWS
FOR FAIR COMPARISON



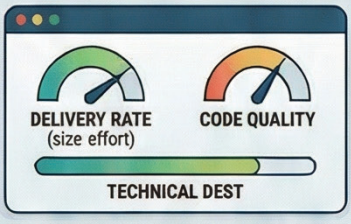
FUNCTIONAL USER
REQUIREMENTS



TECHNICAL DETAILS
(*HOW*)

MEASURE THE "WHAT," NOT THE "HOW"

1. MANAGING PERFORMANCE



USE PERFORMANCE MEASURES TO FIND OPPORTUNITIES FOR IMPROVING SOFTWARE DEVELOPMENT AND DELIVERY.

THE STANDARD UNIT IS THE FUNCTION POINT (FP)

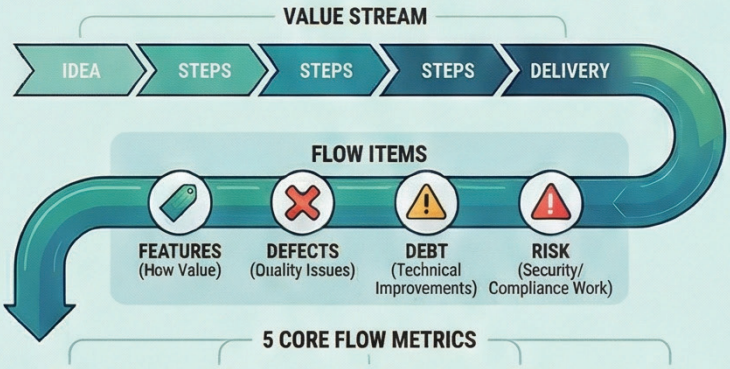
A standardized, technology-independent unit for measuring the size of software functionality delivered to the user.

3. HEARING THE VOICE OF THE CUSTOMER

GO BEYOND INTERNAL METRICS BY MEASURING SOFTWARE DEFECT DENSITY (defects per function point) AND CONDUCTING CUSTOMER SATISFACTION SURVEYS TO GAUGE PERCEIVED QUALITY.

2. ANALYZING VALUE FLOW

FLOW METRICS TRACK HOW EFFICIENTLY BUSINESS VALUE MOVES



5 CORE FLOW METRICS

FLOW TIME (How long does it take to deliver work?)

FLOW VELOCITY (How much?) - Measures Throughput

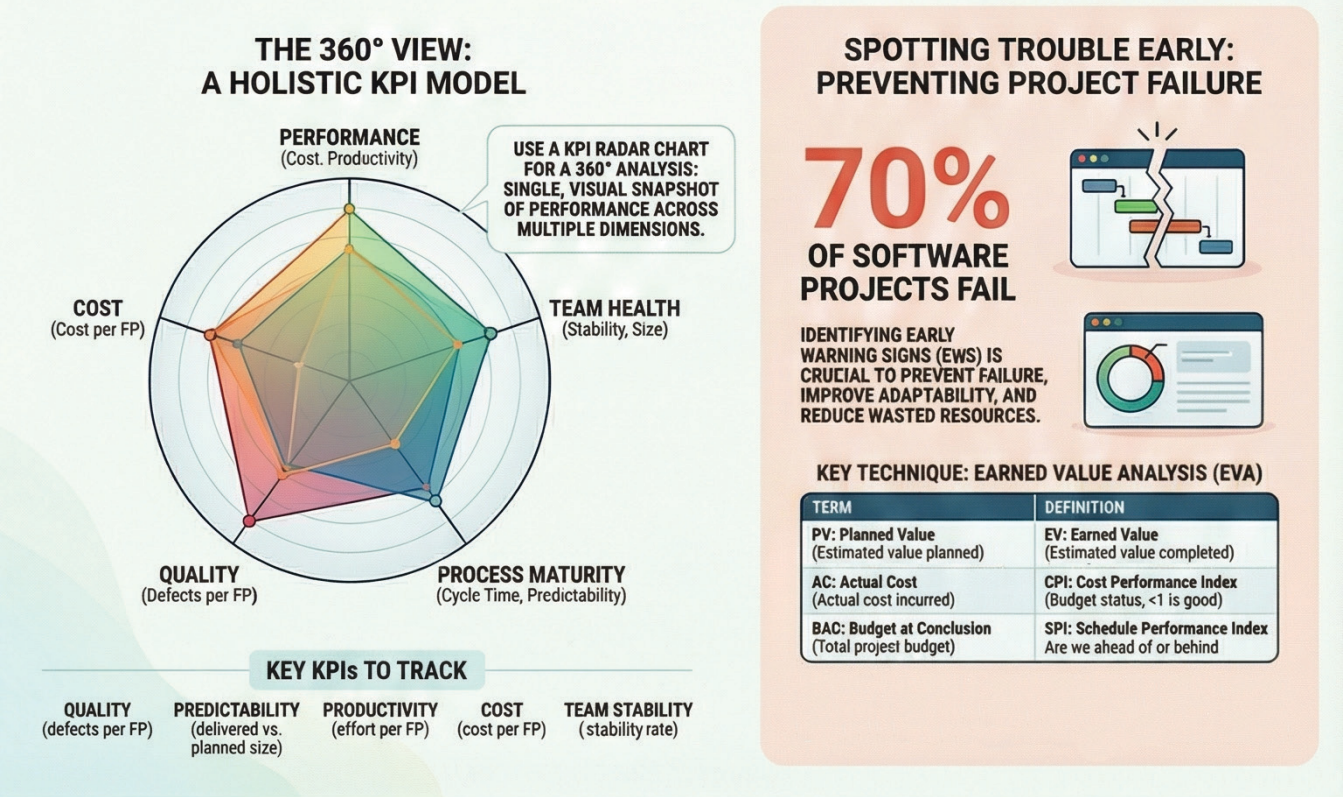
FLOW EFFICIENCY (Active Work) - Identifies Waste

FLOW LOAD (How much In-Progress?) - Warns of Bottlenecks

FLOW DISTRIBUTION (What is our Mission) - Checks Strategic Alignment

4. SPOTTING EARLY WARNING SIGNS (EWS)

PROACTIVELY IDENTIFY RISKS OF PROJECT FAILURE. TECHNIQUES LIKE EARNED VALUE ANALYSIS HELP FORECAST BUDGET AND SCHEDULE OVERRUNS BEFORE THEY BECOME CRITICAL.



IT VALUE METRICS

Link to Learning Center:
https://ifpug.mclms.net/en/package/14822/course/23703/view

C-level leaders know that in this highly competitive business world it is important to have the right data at the right time, which is well-analysed to make informed decisions. Also, defining, measuring, and communicating the business value of IT can be challenging. IT Value Metrics Key Enablers to the Business focuses on IT industry best practice key metrics, measurement practices, and analytics. It also focuses on measuring IT value metrics.

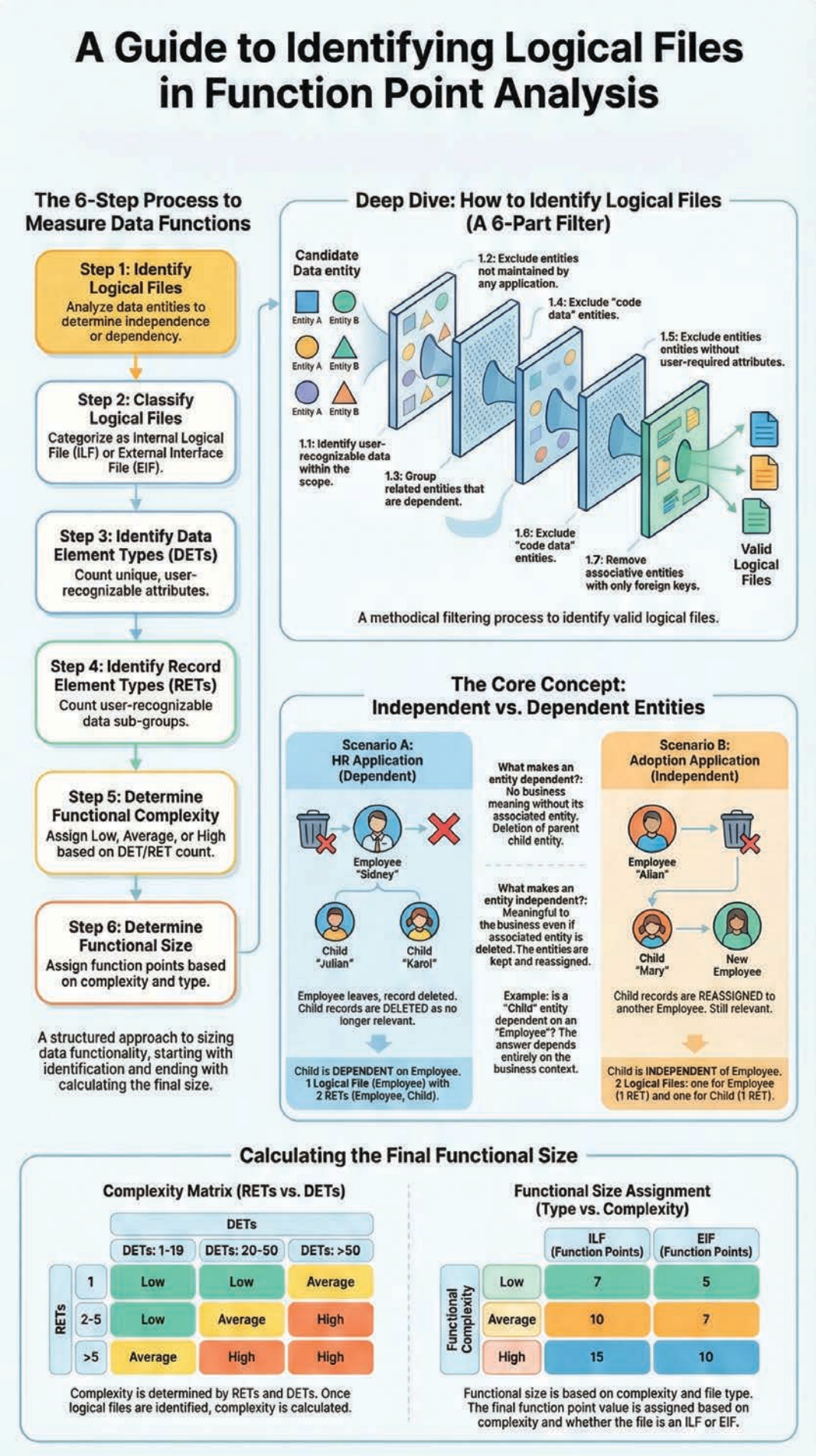
Measurement of software development is relatively easy to do. But measurement of the business value of software development has not been as widely recognized as it should have been. Too often, project prioritization is driven by other factors. These include the technology being used, the time to completion, resources required, the difficulty of the project, or even who is shouting the loudest.

The insights provided here can serve as a guide to C-level leaders.

Many CIOs and their IT departments have long been engaged in the use of software metrics to perform management tasks. These include 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 must also be formulated to quantify business value.

IT value metrics programs are simply that -- collections of key data with corresponding analytics to provide valuable insight into the business and increase its value through IT.

The IT value metrics described in this publication can improve a CIO's ability to gain knowledge regarding how to better manage risk and performance optimization. The ultimate value of measuring IT is quantifying its return on investment for the organization -- measurable in one way using a form of balanced scorecard (BSC) in terms of finance, customer satisfaction, business processes, and learning and growth.



GUIDELINES FOR LOGICAL FILES IDENTIFICATION

Link to Learning Center:
https://ifpug.mclms.net/en/package/18169/course/27669/view

Identifying and measuring data functions is an essential step in the process of Function Point Analysis and one of the most relevant, with a significant impact on the result of the count.

According to the IFPUG Counting Practices Manual (CPM), the main steps for measuring data functions are:

1. Identify and classify logical files.
2. Count data element types (DETs) and record element types (RETs).
3. Determine the functional complexity for each data function.
4. Determine the functional size for each data function.

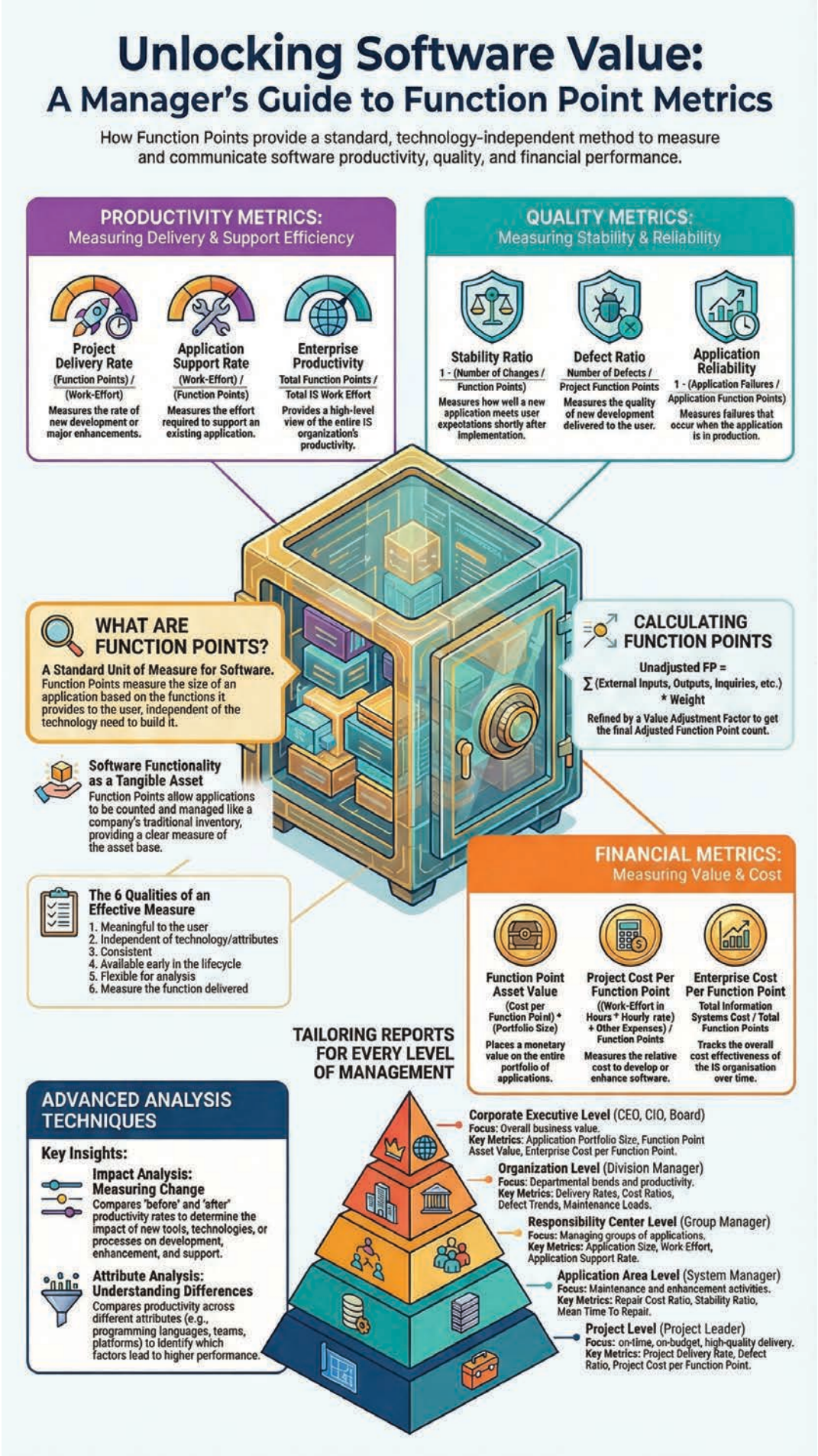
Step 1 "Identify and classify logical files" includes as a sub-step the grouping of related entities that are entity dependent into logical files, combining two types of analysis; one driven by process – based on the user transactions, and one driven by data – based on the business rules.

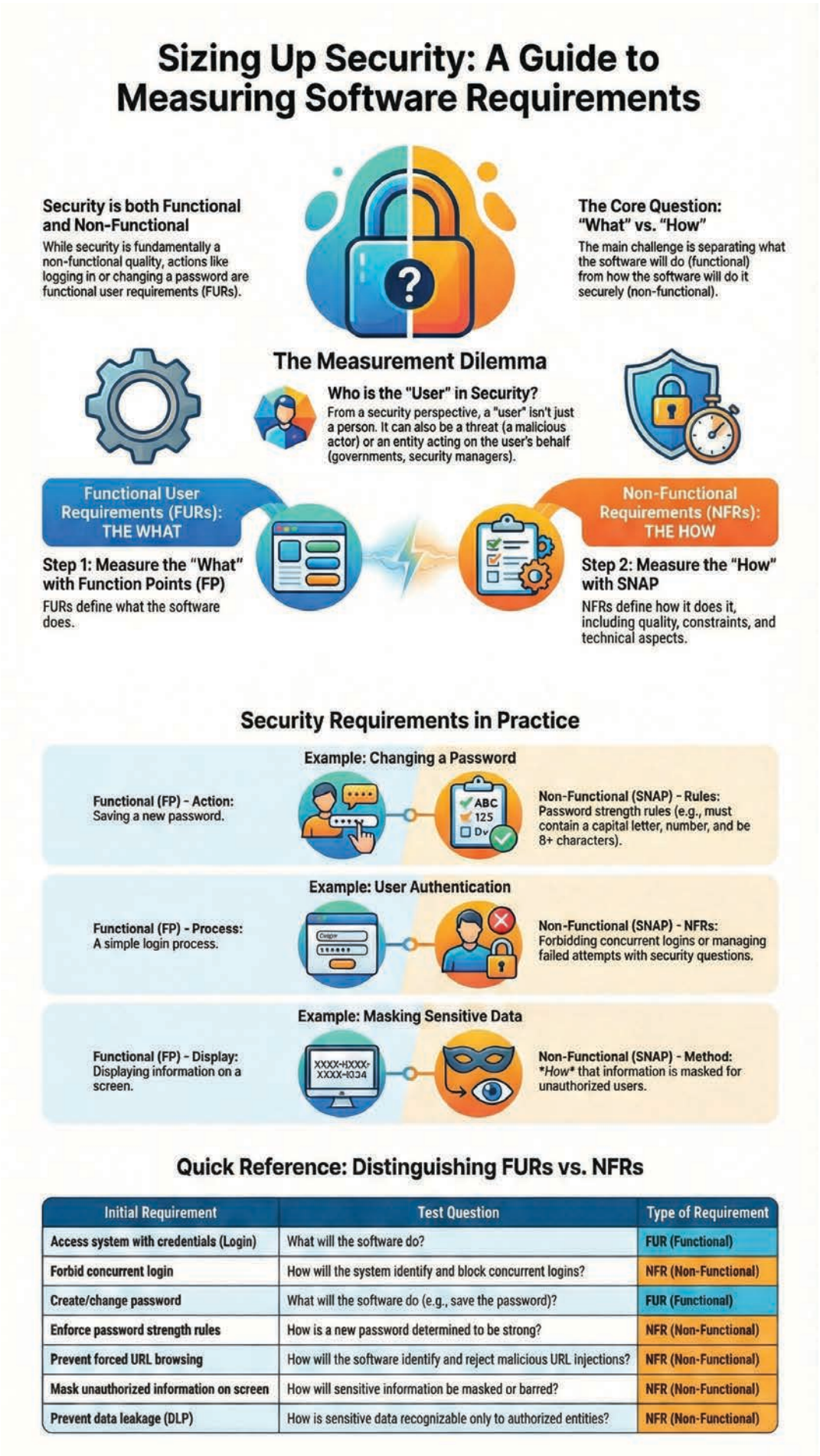
Although measuring data functions requires, from the function point analysts, skills and experiences regarding system data modelling, data normalization, entity relationships, cardinalities, primary and foreign keys, among others; this paper aims to provide complementary guidance and a simplification of the analysis on how to group entities into logical files, by applying the concepts from the CPM.

FUNCTION POINTS AS ASSETS

Link to Learning Center:
https://ifpug.mclms.net/en/package/15921/course/29293/view

Function point analysis is a proven, reliable, and ISO standard method for measuring the software work-product from the customer's point of view. Complementing function point analysis are both the Software Non-functional Assessment Process (SNAP) – which is also ISO standard -- and Simple Function Points which quickly estimate function point counts. IFPUG believes that "Function Points as Assets," with almost 60 pages of metrics and associated information, provides an excellent primer for those wanting to learn how function point analysis can help provide them with a competitive advantage in the software development space. These metrics can also be applied to SNAP and Simple Function Points.





Initial Requirement	Test Question	Type of Requirement
Access system with credentials (Login)	What will the software do?	FUR (Functional)
Forbid concurrent login	How will the system identify and block concurrent logins?	NFR (Non-Functional)
Create/change password	What will the software do (e.g., save the password)?	FUR (Functional)
Enforce password strength rules	How is a new password determined to be strong?	NFR (Non-Functional)
Prevent forced URL browsing	How will the software identify and reject malicious URL injections?	NFR (Non-Functional)
Mask unauthorized information on screen	How will sensitive information be masked or barred?	NFR (Non-Functional)
Prevent data leakage (DLP)	How is sensitive data recognizable only to authorized entities?	NFR (Non-Functional)

MEASURING THE SIZE OF SECURITY REQUIREMENTS

Link to Learning Center:
https://ifpug.mclms.net/en/package/17586/course/32223/view

Security is one of the non-functional characteristics of a software product However, some security activities (such as login and logout) are considered functional and hence are counted by function points (FP) according to function point analysis (FPA).

The purpose of this document is to guide users of the International Function Point Users Group (IFPUG) methods to distinguish between the functional and the non-functional aspects of software security. It contains general guidelines as to what should be considered functional and what should be considered non-functional. It also presents case studies using the Software Non-functional Assessment Process (SNAP) methodology to size security non-functional requirements (NFRs).

The intended audience of this paper includes all levels of professionals who need to apply FPA and SNAP to measure software security requirements. Those who need to interpret and use the results of such measurements in the context of project estimating, planning and control also will find this paper of interest.

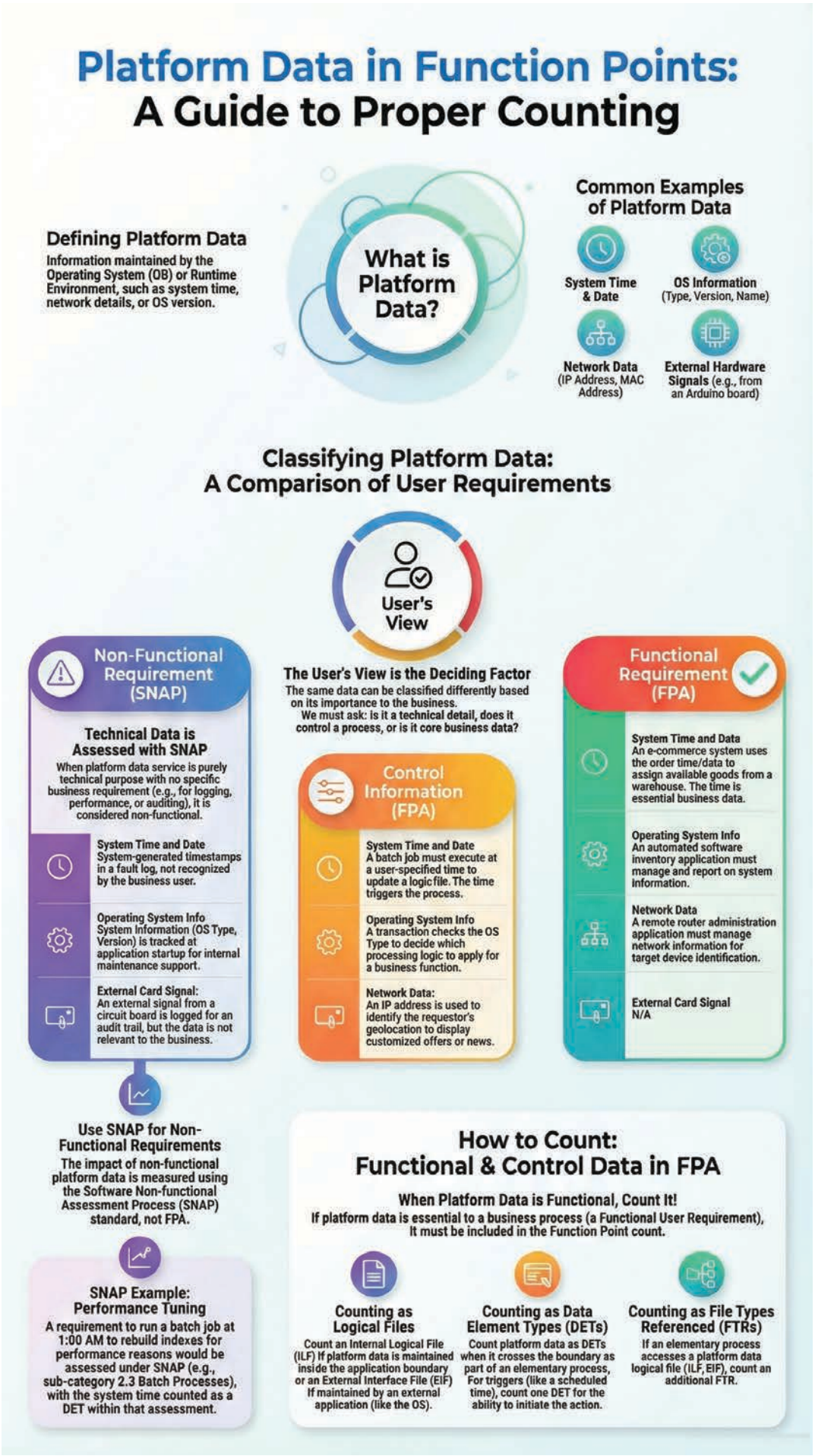
Sections 2-5 are oriented for all users.

Section 6 and following address the non-functional aspects of security and is oriented for SNAP users.

SYSTEM TIME AND PLATFORM DATA

Link to Learning Center:
https://ifpug.mclms.net/en/package/16189/course/29861/view

System time and other platform data are commonly used in modern software systems. Examples of platform data include network data (e.g. IP address, MAC Address), system identification data (e.g. OS Type, OS Name and Version) and any other data maintained within the Operating System (OS) or Runtime Environment. Platform data is sometimes used as tracking information, such as logging transactions, but some other times this data is significant and essential to satisfy business requirements. It is then important to establish clear guidelines on how to count such data in Function Points. This paper makes use of several examples to illustrate the application of the CPM rules to identify and count platform data and the associated transactions.



EVENTS COMMITTEE

By Kiran Yeole, Chair

The Events Committee remains committed to its mission of connecting experts, practitioners, and thought leaders from across the globe to foster meaningful dialogue and share innovative practices in software measurement. Over the past six months, we have successfully delivered key events that not only enriched the IFPUG community but also advanced the discipline of software metrics and analysis.

ISMA (International Software Metrics & Analysis) Conferences:

Our most recent flagship event was the ISMA 2025 Hybrid Conference, held on Sept. 25, 2025, in Seoul, South Korea. Organized by IFPUG in collaboration with KOSMA, this event brought together global experts and practitioners for a day of insightful sessions focused on advancing software measurement in the era of AI.

The conference featured 10 presentations, covering topics such as AI-driven sizing, functional and non-functional measurement, and public sector best practices. With participation from many countries and both in-person and virtual attendees, ISMA 2025 reaffirmed IFPUG's commitment to fostering innovation and professional growth in the global measurement community.

IFPUG Knowledge Café Series:

The IFPUG Knowledge Café Series continues to serve as a cornerstone for collaborative learning and community engagement. It provides members and guests with a dynamic platform to exchange ideas, showcase innovations, and gain insights from real-world experiences in software measurement.

To broaden our reach and overcome language barriers, the Events Committee has launched an initiative to host webinars in local languages. As part of this effort, two successful sessions were recently delivered in Italian and one session in Japanese. This initiative is expected to strengthen community engagement and significantly enhance learning experiences across diverse regions.

Recent Webinars:

1. **Dr. Roberto Meli (CEO of DPO Srl-Italy)** presented the topic **"Software Reuse Measurement in a Contractual Context"** on May 22, 2025. In this webinar, Roberto covered the measurement of functional and technical reuse in software applications and explained a cost model considering the reuse in contractual context.
2. Panel talk **"AD&M Benchmarking"** on June 5, 2025:

   Panel members - Don Beckett, Matt McDonald, Alfonso González, Luis María Martinez and Gabriel Gori. Panel Moderator - Kelsey Conlan. In the panel talk the panelists answered the questions like how benchmarking is done, how long it will take, which benchmarking data to use, if it can be valuable, trustful and for example useful for performance improvement.
3. **Ryo Takahashi** presented the topic **"Improving Software Cost Estimation Accuracy"** in Japanese on June 11, 2025. This was our first-ever webinar in the Japanese language. Ryo Takahashi, an expert in developing cost estimation methods, shared his experience implementing these practices within his company.

For more information on these webinars and recordings, you can visit the IFPUG website.

We continue to provide platforms such as Coffee Talks and ISMA conferences for meaningful conversations and knowledge sharing. If you have suggestions for future topics or speakers, or are interested in volunteering, we welcome your ideas and involvement.

Please reach out to us at **pec@ifpug.org** or submit a volunteer form through the IFPUG website at https://ifpug.org/about-us/committees/volunteer.

FUNCTIONAL SIZING STANDARDS COMMITTEE

By Esteban Sanchez, Chair

The Functional Sizing Standards Committee (FSSC) supports IFPUG's community in the application of the Counting Practices Manuals (CPMs) for both simple and traditional function points. Our team works with passion and commitment to maintain and enhance the guidelines in the manuals, ensuring a consistent application of the standards around the world. As technology continues to evolve, we
stay close behind—researching, clarifying, and publishing new guidance to keep the function points methodology modern and relevant.

The FSSC recently delivered several important achievements. We completed the updates to U Tip #3, ensuring that early sizing guidance continues to evolve in alignment with IFPUG's broader strategy. You can expect to see the new version of this U-Tip on our website soon. We also published our long awaited paper on Guidelines for Logical Files, a major milestone that brings clarity to one of the most technical aspects of the CPM/SPM. And

finally, we had the opportunity to present a webinar in Seoul on the topic of Function Points for AI Bots—an exciting area where sizing practices intersect with emerging technologies.

Looking ahead, our focus turns to a super exciting initiative: CPM Modernization. Yes, you read it right, we are modernizing the CPM!. **This modernization effort is not intended to alter the fundamental principles of Function Point Analysis (FPA)**, but rather to refresh the supporting materials so they resonate with today's technology landscape. In doing so, the project will bridge the gap between the enduring methodology and the evolving realities of software development, ensuring that Function Points remain a trusted and effective measurement tool for decades to come. This is a significant endeavor. A dedicated task force will be formed, with representation from multiple IFPUG committees and external experts. The team will adopt an agile SCRUM approach, delivering modernization in small, high value increments to ensure early visibility, continuous stakeholder engagement, and a smooth transition toward a more contemporary CPM.

The FSSC is always looking for volunteers. If you want to be part of the team driving these important initiatives, 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 hear from you. Please submit your comments to esanchez@galorath.com.

NON-FUNCTIONAL SIZING STANDARDS COMMITTEE

By **Charley Tichenor, Vice Chair**

The IFPUG Non-functional Sizing Standards Committee (NFSSC) continues its activities to explain to SNAP to the industry, the benefits of 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, like the CFPS CEP? This way you can be sure that you have properly trained staff ready to size software, corresponding to software non-functional user requirements, measured by SNAP. IFPUG launched the Certified SNAP Specialist (CSS) certification, which complements the existing Certified SNAP Practitioner (CSP) certification. This will help you introduce non-functional measurement from a contractual perspective as well. CSS certification and APM have been translated into Italian, expanding these opportunities to native speakers of Italian.

Taking the CSS certification now could be an advantage for all measurers in a market where certifications are a must to work in certain contracts and where the number of CFPS is very high.

We are getting the translation of the APM into Spanish underway! **The Chinese translation is ready and currently under review.**

To maintain CSS certification we periodically prepare, as NFSSC, valid CEP presentations. The latest ones are:

- "How to Measure the User Interface with IFPUG SNAP" presented during GUFPI ISMA 1EM2025 Webinar
- "Non-Functional Measurement AI-Powered Chatbot" presented during ISMA 2025. See the IFPUG Member Services Learning Center for the presentation
- "ToolTips: The Non-Functional Side of the Moon" for the GUFPI ISMA (Naples / Zoom)

We released and are working on publishing a series of examples of SNAP uses that will concretely help organizations complement IFPUG function points by measuring the non-functional dimension.

- Examples of sub-category 1.2 with measurements made in the field
- Examples of using sub-category 1.5 - especially in the context of configurable software (like SAP, oracle application etc.)
- Using Gantt Charts to Track SNAP Work Effort (already released).
- Examples of when to consider a sub-category in ADD, CHG, DEL in an enhancement project

To evolve the methodology, if necessary, we need your SNAP measurement data. So, we strongly encourage you to populate the ISBSG database with data on SNAP or contact us if you prefer to make it available in other forms for the NFSSC. We will continue to enrich this list. We will ensure the confidentiality of your data under your terms.

We are also beginning work to create a structured way to estimate the number of SPs, both in the early stages of a project and to make a quick estimate of the number of SPs in some circumstances.

Other important activities either completed or nearly completed during this period include the following:

- The writing of a new white paper that will give guidance on how to apply SNAP to applications built with microservice architectures
- Work on a white paper on "Measuring the Size of Security Requirements" with SNAP has been completed and published, and is in the IFPUG Member Services Learning Center

- The growing use of our first five YouTube videos overviewing the SNAP method. We have 1,339 views as of this writing. We encourage you to access these by either searching YouTube by "IFPUG SNAP," by "sizing non-functional software," or something similar. Please "Like" them if you do

We are also working to explore another important benefit of using SNAP: the measurement of quality indices such as technical debt. Now is the time to measure this as well to enable companies to manage quality in a systematic way.

Don't let the perceived cost of adopting SNAP hold your company or organization back. Many major industries are already embracing SNAP and experiencing its wide range of benefits—from improved effort estimation and the ability to establish non-functional baselines, to leveraging SNAP sub-categories as a common communication language between business teams and customers. We invite you to see the presentation made at ISMA 22 "Evaluating a Change in Software Architecture: A SNAP Approach."

We are honored to have been named IFPUG Committee of the Year for the second consecutive year. Thank you to the Board and to every team member who contributed, each with their own building block, to achieving this additional recognition.

The NFSSC gives you access to top experts in measuring non-functional software requirements, helping you understand the rationale behind the practices you'll later apply in your organization or present in academic settings.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, please send in 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.

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