TOTAL METRICS WWW NEWSLETTER OCTOBER 1999

Well once again I am able to bring you the latest news on Metrics after arriving back from one of the greatest cities on earth – New Orleans. The International Function Point Users Group (IFPUG) met there again for the second time this year and held a very successful meeting. New Orleans provides an excellent backdrop for a metrics conference, since, in most cases, the dryness of the days topics can be counteracted by the richness of the nightlife, music and cajun cuisine.

This month's key article is a summary of one of the IFPUG meeting's key note speakers, Paul Strassmann, whose presentation was anything but 'dry'. Strassmann emphasized the need for organizational metrics programs to shift their focus away from 'cost' of software to the 'value' of software. He proposes that organizations need to ensure that their long term strategies involve optimizing the longevity of their software so as to maximize their knowledge capital. Strassmann's presentation is thought provoking and identifies some key issues in measuring the true market value of an organization beyond the financial accounting methods of measuring just capital assets.

Pam Morris
Editor

CONFERENCES

The Australian Conference of Software Metrics – ACOSM '99 – November 11th and 12th 1999 in Melbourne Australia – Software Metrics to take us into the new millenium. For more details email: asmavic@ozonline.com.au

The 11th ESCOM (European Software Control and Metrics Conference) jointly with the 3rd SCOPE (Software Certification Program in Europe) conferences 18th – 20th of April 2000, Munich Germany – key note speakers are: Dieter Rombach, Chris Kemerer and Tom Gilb. For further information see WWW.escom.co.uk or contact the conference manager joCowderoy@escom.co.uk.

The 6th International conference on Software Reuse (ICSR6) – Vienna Austria June 27 – 29 , 2000. The conference will cover all topics related to software reuse, such as the application of reuse metrics. More information can be found on WWW.spe.ucalgary.ca/icsr6/.

Call for Papers:

The 11th ESCOM (European Software Control and Metrics Conference) jointly with the 3rd SCOPE (Software Certification Program in Europe) conferences 18th – 20th of April 2000, Munich Germany. Theme " Controlling Software Projects: The Human Factor". Please send a one page summary to Katrina Maxwell: datamax@computer.org by December 1st 1999.

The 6th International conference on Software Reuse (ICSR6) – Vienna Austria June 27 – 29 , 2000 – Call for papers – contact Deiter Donhoffer – Dieter.Donhoffer@arcs.ac.at.

International Function Point Users Group (IFPUG)
What's News?

IFPUG celebrated a very successful conference in New Orleans from October 18th to 22nd attended by over 250 participants. Keynote speakers included:

- Paul Strassmann a world leading consultant in information systems and author of over 150 articles on information management and information worker productivity.
- Tim Lister of Atlantic Systems Guild.
- Tom Gilb - recognized as a metrics 'guru' and originally coined the term 'software metrics' in his book of the same name in 1976.

The IFPUG conference also hosted the annual meeting of the International Software Benchmarking Standards Group (ISBSG). Terry Wright from Australia chaired the meeting and announced that their repository now exceeds 800 projects and an update to their data repository will be available before the end of the year. (For more information WWW.ISBSG.org.au)

Three new IFPUG board members were elected, these included Charles Gold, Andrew Sanchez and Mary Bradley. Gordon Lunquist took over the position of President from Carol Dekkers who now has the position of Past President.

New committee chairs include:

- Valerie Marthaler (EDS) – Counting Practices Committee
- Dan Bradley – IT Performance
- David Herron – Management Reporting Committee

The Netherlands Software Metrics Association (NESMA) announced that their recent publication on "how to effectively count function points for the enhancement and maintenance environment" is now being translated from Dutch into English and will be available by the end of the quarter. The paper addresses the difficult issue of measuring enhancement projects and using the function point count for estimating the project resources. More details are available on the NESMA web site, http://WWW.nesma.nl.

The committee meetings held at the conference had the following outcomes:

- **IFPUG Certification Exam**
  - the exam for certification to IFPUG CPM 4.1 was held for the first time.
  - Note: The Australian Software Measurement Association (ASMA) is planning to hold their next IFPUG certification exam on November 11th to coincide with their ACOSM conference in Melbourne. This exam will be for the 4.1 Release (for more information see asmavic@ozonline.com.au).

- **IFPUG Counting Practices Committee**
  - Pam Morris and Martin D'Souza of Total Metrics represent ASMA on the IFPUG Counting practices committee (CPC) and attended the New Orleans meeting.

- The CPC made a presentation on their plans for the next 12 months, now the CPM has been completed. They plan to issue a set of guidelines for assisting counters in making decisions when counting. These guidelines clarify the process of counting and will complement the rules and definitions found in the CPM. Areas identified as requiring extra guidance, which will be covered by this set of guidelines include:
    - Identifying logical groups of user data and distinguishing logical files from data generated by quality and technical requirements – topics covered will be how to count code tables and their maintenance, counting from data models and OO design models, identification of RETs.
    - Distinguishing what changes can be counted as part of an Enhancement Project count i.e. when is a change 'maintenance' and when is it an 'enhancement'.
    - How to consistently count data that is shared, copied, transmitted and read between applications. I.e. when can we count it as an EIF, EQ, EO and/or an EI.
    - Identifying Unique Elementary processes – extra guidelines on how to consistently distinguish between unique elementary processes and variations within a single process. Typical areas where inconsistency of counting is experienced is when outputs are generated on different media, enquiries have multiple combinations of selection criteria and inputs which have a variety of methods of data entry.
    - Clarification of application boundaries between the application being counted and its 'peer' applications and the utility software which provides services to the application. E.g., Help Utilities, Backup and Recovery, Report Controls.
- The CPC is also working on a project to investigate the changes necessary to enable CPM 4.1 to conform to the recently published ISO standard 14143-1:1998 for functional size measurement.
- The CPC have also begun work on updating the IFPUG Case Studies to incorporate the counting rules of CPM 4.1. They are currently working on completing Case Study 1 by mid 2000.

IFPUG Conferences

- The next IFPUG Conference is due to be held in Santiago in the week starting 11th of September 2000. The IFPUG workshops will be held from April 2nd to 4th in Jacksonville, Florida.
- Further information on the next conference is available by contacting the IFPUG office at +1 614 895 7130 (voice), or +1 614 895 3466 (fax), by email at ifpug@ifpug.org or by accessing the website at http://www.ifpug.org.

IFPUG Academic Affairs Committee

- The Academic affairs committee has recently sponsored a study into the effectiveness of the General Systems Characteristics (GSCs). The study was conducted as part of a Masters thesis by Captain Joe Willoughby and Lieutenant Mike Prater from the Airforce Institute of Technology. The study has now completed and the results were published at the New Orleans conference. The study concluded that:
    - the GSCs in their current form do not adequately represent the application's complexity required to adjust the function point counts of a software sizing project.
    - 6 of the 14 GSCs may need to be reconsidered in light of emerging technology found in today's software environments.
    - The CPM needs to provide better definitions and more relevant examples to reflect the applicability of the GSCs to today's technology.
    - Further research will be required before deleting or adding GSCs or eliminating them all together.

Management Reporting Committee

- The committee is investigating publishing chapters within 'Guidelines for Software Measurement'; as a book available within the public domain.

RESOURCES

Papers

The proceedings of the 9th International Workshop on Software Measurement are now available online at the following WWW address: www.lrg.uqam.ca/wsm99/index2.html. Many of the papers presented at the conferences were on Function Points and Full Function points and include the following:

- An analysis of the General System Characteristics in the paper by C. Lokan & A. Abran: Multiple Viewpoints in Functional Size Measurement
- The use of software layers for functional size measurement in the paper by Desharnais et al.: Software Layers and Measurement.
- The use of UML in functional size measurement in the paper by R. Stutzke
- Using UML Elements to Estimate Feature Points
- An analysis of the IFPUG, MARKII and Full Function Points structure, from a measurement theory viewpoint in the paper by Thomas Fetcke: A Generalized Structure for Function Point Analysis.

Training

Project Estimation

The International Software Standards Benchmarking Group (ISBSG) have recently released a project estimating course to complement the material in their workbook on software estimating. The workbook uses the data in the ISBSG repository as the basis for its estimating algorithms. This course has been developed in Australia and in its first round of presentations, held in October, it has been received very successfully. More information on the content of the course and its availability can be provided by: SEA Metrics - Alison Handley – alison.handley@seavic.org.au.

Newsletters

Metrics Views - online

IFPUG have now made their Metrics Views newsletter available to members on the web see: www.ifpug.org.

KEY ARTICLE

Stemming the tide of

Software Asset Rot

Paul Strassmann

The key speaker at the IFPUG October conferences was Paul Strassman from the United States of America. Paul is a well-known author on IT performance and his presentation gave the audience an insight into the future of software as the key contributor to the knowledge capital of an organization. His presentation was titled; *Measuring Knowledge is the ultimate Metrics Challenge.*

Strassman proposed that the true market value of an organization is a reflection of its 'knowledge' assets rather than 'capital' assets, typically measured as an indicator of 'worth' by accountants. However 'Knowledge Capital' is not a reflection of IT spending. Statistics indicate that profits and IT spending are unrelated. Many organizations are spending up to $100,000 on IT, per employee, but the money in most cases, is being wasted on poor quality software or cancelled projects. Over the past years, information technology has been squandering its software resources because it could. Each new technology cycle has been relatively cheap, we have got into the habit of 'build and jump' as we have gone from one software and hardware environment to the next, each time dumping the previous set of software to take on the latest. Although each cycle to date has been relatively cheap, the next software cycle to adopt Network utilities is proposed to cost industry *trillions* of dollars. Mr. Strassmann cited industry figures that find that this cumulative software spending has resulted in companies spending $480 million on software that is valued at 69% less than it actually cost. This 'asset rot' consumes a total of 37% of all IT spending.

In order for organizations to ensure that their IT spending is not wasted, they need to start investing in their 'knowledge capital' as a long-term strategy. I.e. adopt an IT policy which recognizes that the true value of an organization is reflected in the long-term viability of its software assets. Software investment needs to be approached as a sustainable long-term investment. It should be the storage repository of the 'knowledge capital' of an organization and as such be 'immortal'. As we approach the 21st century we need to start building asset value into our software, so as to ensure the longevity and competitiveness of our organizations. We need to ensure that our database repositories of knowledge can migrate to each new technology environment.

But how can metrics help? We need to start measuring the *real* cost of maintaining ailing code. If we can transform the current environment into long term technologies then the cumulative cost per function point of software, which is *independent* of its operating environment will be about $1500 per function point after 14 years. In comparison the cumulative cost of software *written specifically* for a technology environment will rise to $4,500 per function point over a mere seven years. With global spending on IT forecast at being 30 trillion dollars over the next 10 years a more strategic approach will result in significant savings, worldwide. Any organization that can adopt a technology independent approach will be able to convert software from an expense to an asset as they optimize their knowledge capital. Where knowledge capital is measured as being information value added to the organization over the cost of the capital.

The key performance indicators for an organization will be to understand the ratio of knowledge capital to financial capital to truly have an understanding of an organizations market value. Knowledge capital is just not accumulated knowledge of the organization; it can also include knowledge from customers and suppliers. The knowledge capital accumulation efficiency is the key currency that organizations need to start to manage.

Strassmann summarized his presentation by making the following key points:

- When collecting metrics on the dollar cost per function point of software we need to take a long term view and look at the whole lifecycle. Since software is a long-term asset we need to estimate its depreciation and include its residual value.
- Replacement cost is the only real method of valuing software.
- All organizations need to adopt a strategy whereby software at the enterprise level must be seen to contribute to knowledge capital accumulation. It can no longer be seen as an expense, but rather an investment.
- Market value and company share price should be based on appreciation of knowledge capital. We need to broaden our focus from focussing on cost to focussing on value.
- Acknowledge that capital budgeting is the key to successful business planning.

Paul can be contacted on paul@strassmann.com and more information about how to calculate Knowledge capital can be found on his web site. WWW.strassmann.com.

THOUGHTS WORTH THOUGHT

A person never discloses their own character so clearly as when they describe another's.

It is right to be content with what we have but not with what we are.

FEAR can age you faster than years – FEAR = Fantasized Experiences Appearing Real.

No one is really old until their mother stops worrying about them.

It takes a good person to prevent a catastrophe but a great person to use a catastrophe.

Many people owe the grandeur of their lives to their tremendous difficulties.

Two quick ways to disaster are to take nobody's advice and to take everybody's advice.

For every criticism you make of someone's job performance, make sure you give the person four compliments.

Nothing makes a person more productive than the last minute.