COSMIC-FFP - ISO 19761
State of the Art 2004

A. Abran, R. Meli, C. Symons

Software Measurement European Forum - SMEF 2004
Rome (Italy), January 29-30, 2004

Introduction

Software Engineering:

- *"The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software".*

Institute of Electrical and Electronics Engineering - IEEE

Introduction

- Is measurement **mainstream** in the management of software projects?
  - Beside schedule and costs, of course!
- What about functional size measurement?

Introduction

Can you imagine sciences, business or engineering without measurements?

- Where are we in software measurement?
- What is the status of functional size measurement?
- What about this new kid on the block?

List of topics

- Introduction
- Software Measurement
- Functional Size: Past & Present
- Where is it going?
- COSMIC-FFP
- Key Competitive Advantages
- Conclusion

Software Measurement

Measurement is a technology

- Measurement Designs =
  - **Technical Knowledge**
  - **Consensus on technology concepts & conventions**
  - International Standards & Metrology
- Measurement Procedures = **Know How**
- **Measuring instruments**

...and technologies emerge, evolve, mature...

- and get into mainstream if it they are strong enough to meet the market needs and constraints

Software Measurement

When does an industry **adopt** a technology?

- When the technology becomes integrated:
  - into the technological environment
  - within the business context
  - ...and has been proven to work well in a large variety of contexts
    - The technology has matured, or is maturing rapidly

Software Measurement

When-Why does an industry **promote a new** technology?

The industry must recognize that:

- Current practices are not good enough
- There is a direction that has been proven to work in other contexts
- Individual industry players will not accept the pain of change (without being forced into by the market)
- It needs to speed up the transition to the new technology to overcome an acknowledged problem

Software Measurement

What about software measurement?

Who is doing what to speed up adoption?

- The big customers of software:
  - Design and deployment of software process assessment models
  - Regulatory framework
    - Consensus on measurement standards and on their fit into the national technology frameworks

Functional Size

Functional Size Measurement = a **technology**

- Not a religion

+ 25 years old ('Function Point Analysis'):

- In MIS : .... at most 1%
- Elsewhere: ... next to 0%

What does it mean?

- ... irrelevance ?
- or immaturity of either:
  - Technology?
  - Industry environment?

Functional Size

Where is it going?

- In the mid-1990's, FPA was proposed for international standardization - ISO

What happened?

- Agreement:
  - on benefits but...
  - FPA was not recognized as **the** solution
  - Criteria for solutions
    - ISO 14143: Parts 1 to 5

Software Size

ISO Outcomes =

- Emergence and recognition of a 2nd generation = **COSMIC-FFP**
- Recognition of 3 standards 1st generation:
  - MKII
  - IFPUG
  - NESMA
- Integration of FSM standards within the ISO standards infrastructure:
  - To ensure the technology fit

COSMIC-FFP

Design & Acceptance as ISO standard:

- International design team
- Meets the constraints of many & new types of MIS and real-time software
- Simple, easy to train, understand & use
- Meets data collection rules
- Will lead rapidly to automation

COSMIC-FFP

January 2004:

- Full international recognition by:
  - ISO
  - National countries members of ISO
  - International Repository authority – ISBSG
- Translated into:
  - English, Japanese, Spanish, Italian, French
- A recognized research topic

COSMIC-FFP

2004 - Key needs for COSMIC-FFP

- Techniques for early size estimation
- Improved understanding of layers
- Integration within the education framework
- Tool support – automation
- Certification and accreditation
- Repository of case studies
- Guidelines for taking reuse into account, etc.

COSMIC-FFP

Key competitive advantages:

- **Free and accessible anywhere in the world**
- Full ISO recognition
- Simplicity of its design
- Flexibility for a wide range of software application types
- Ability to capture size from multiple viewpoints
- Compatibility with modern software engineering concepts

COSMIC-FFP

Some challenges:

- Not yet mainstream:
  - Being picked by early adopters
  - Mainstream will follow
  - Catch-up to do in the international ISBSG repository
- Design and marketing of support tools

US market:

- IFPUG community: satisfied with its method
- Non-IFPUG community:.....
- SEI assessment: major influence in the implementation of software measurement

Conclusions

A tremendous **market need** for:

- Estimation
- Performance understanding
- Benchmarking

- ....and measurement
  - ....including Software Functional Size

Conclusions

What is missing today?

- The **know how** to apply COSMIC-FFP
- The **tools** to support the industry and its key players:

  The cultural factor:

  — software staff develop software with methodologies and software tool kits

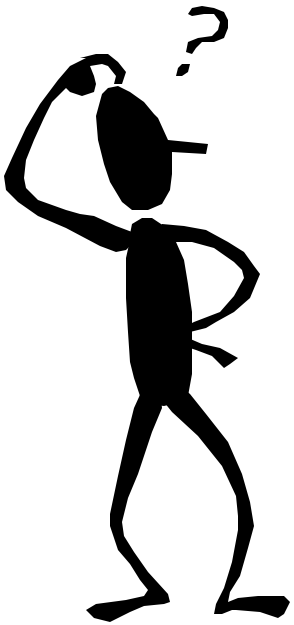
- It is up to you as active industry players

Resources

www.lrgl.uqam.ca/cosmic-ffp

www.cosmicon.com

QUESTIONS



THANK YOU FOR YOUR ATTENTION