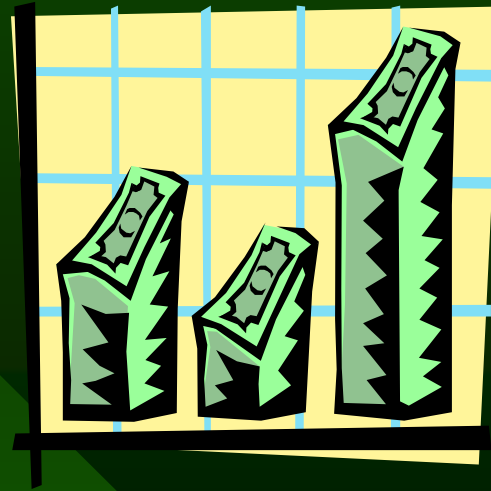


Making Function Points Count



Graham Lawder (CFPS,BoM)

Background of Speaker

Professional Qualification

Bachelor of Management (BoM) Majoring in Information System

Certified Function Point Specialist CFPS

Certificate in Introduction to CMMI

Software Project Estimation

- Business Analysis Training (IRM Training)

Certificate in First Line Management

Statement of Attainment in Workplace Training (Category 1)



Background of Speaker

Professional Experience

2003 – Current: Lalcrest Ltd as a Consultant

2004 – Current: Software Measurement Services Ltd as a Consultant

2004 Supplied FP Analysis services to Total Metrics Ltd (Aust) as a Consultant

2001 – 2005: Function Point Analysis team Manager For Centrelink

1999 – 2001: Function Point Analyst/ I&T Balance Scorecard Administrator For Centrelink

1999 – 1999: Balanced Scorecard Administrator For Centrelink(Large Australian Government service delivery department)



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Disclaimer

Please note: This is not an attempt to lay claim to the measurement and management ideas, theories or methodologies presented here. As with all such initiatives we must 'stand on the shoulders of giants' who went before us.

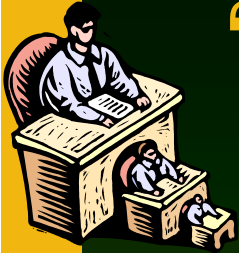


Objective of Presentation

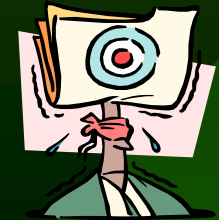
Present a summary of what I believe to be a logical approach to implementing a truly integrated, meaningful and effective metrics program into an organisation and what I see as the benefits of doing so.



Current Management Perception: “Software is a cost that must be minimised”

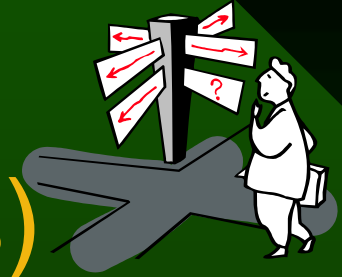


- IT teams/projects are ‘right sized’ regularly, whether they need it or not. I’m sure you can think of many examples.
- If IT teams continue to be unable to adequately defend/prove their budgetary requirements to our customers and business managers then IT(we) will remain an easy target for ‘cost’ cutting.
- The continued failure* of IT projects indicates there is still something wrong.



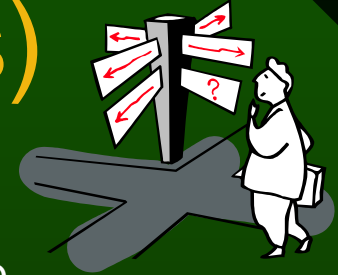
*These problems were documented in The Standish Group's CHAOS Report, which found that 32% of projects terminate before delivery and only 11% are completed on budget. Of the remaining 57% of projects that are completed, the average budget overrun is 87%. The report also found that large companies with large software development projects had the lowest chance of completing a project successfully.

Questions for your Organisation(Gap Analysis)



- What software applications/systems do we have, and hopefully use? (i.e. an up to date asset list)
- What is the usable life expectancy of each software application/system?
- How much cost/effort did each software application/system require to buy or build?
- How much effort/cost/time would be required for each software application/system to be replaced (replacement cost)?
- How much software change per application/system is requested by business each Month/Year (i.e. software churn)?
- How much cost/effort does each software application/system require to maintain each Month/Year?

Questions (Gap Analysis) Continued



- How many user reported errors does each piece of software generate per Month/Year?
- How many user reported errors are generated each release per piece of software?
- How quickly do we deliver software (Delivery rate)?
- Do we have the right amount of IT staff to support, manage, maintain and develop our software assets?
- Do we have the right ratio of technical staff skills for our software assets?
- Should the IT teams get more or less money to meet requirements?
- Are we on pare with comparable organisations for these measures(Benchmarking)?
- What is the cost benefit of our software assets?

Action: Implement Holistic Software Size Measurement.

- Software should be considered as a capital asset, not just a cost, and managed as such.
- Software assets should be reported in organisational accounts and depreciated in line with relevant accounting standards.



Action: Implement Holistic Software Size Measurement.

- Software assets should be measured/sized with an ISO compliant methodology, such as Function Point Analysis 4.2, to enable both Software Accounting and Software Metrics.
- Software project requirements and change requests should use FPA (or equivalent) as one of the estimation and management techniques (i.e. Southern Scope via the Scope Surveyor approach).



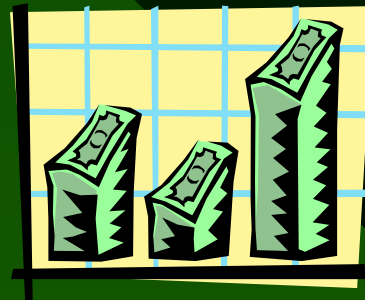
Personal Experience of Partial Implementation

- Based on my experience in the Australian government I recommend the following:
 - ✓ Identify and record all your software assets in a centralised database that can be readily accessed with predefined reports & basic flexible querying (Intranet based). This application size information should include links to things such as the IT teams responsible for maintenance, errors recorded per month and other relationships that are seen as important to the business such as Business lines/cost centre numbers etc.



Partial Implementation

- ✓ Verifiably model and value the software assets via the use of a Functional Size Measurement Methodology (IFPUG Function Points Analysis) and add this information to the software asset database mentioned above.
- ✓ Model and measure the functional size impacts of releases and projects.
- ✓ Maintain the software asset sizes based on impacts identified in previous point.
- ✓ Establish the companies software performance figures against the user recorded software errors in the first month of production.

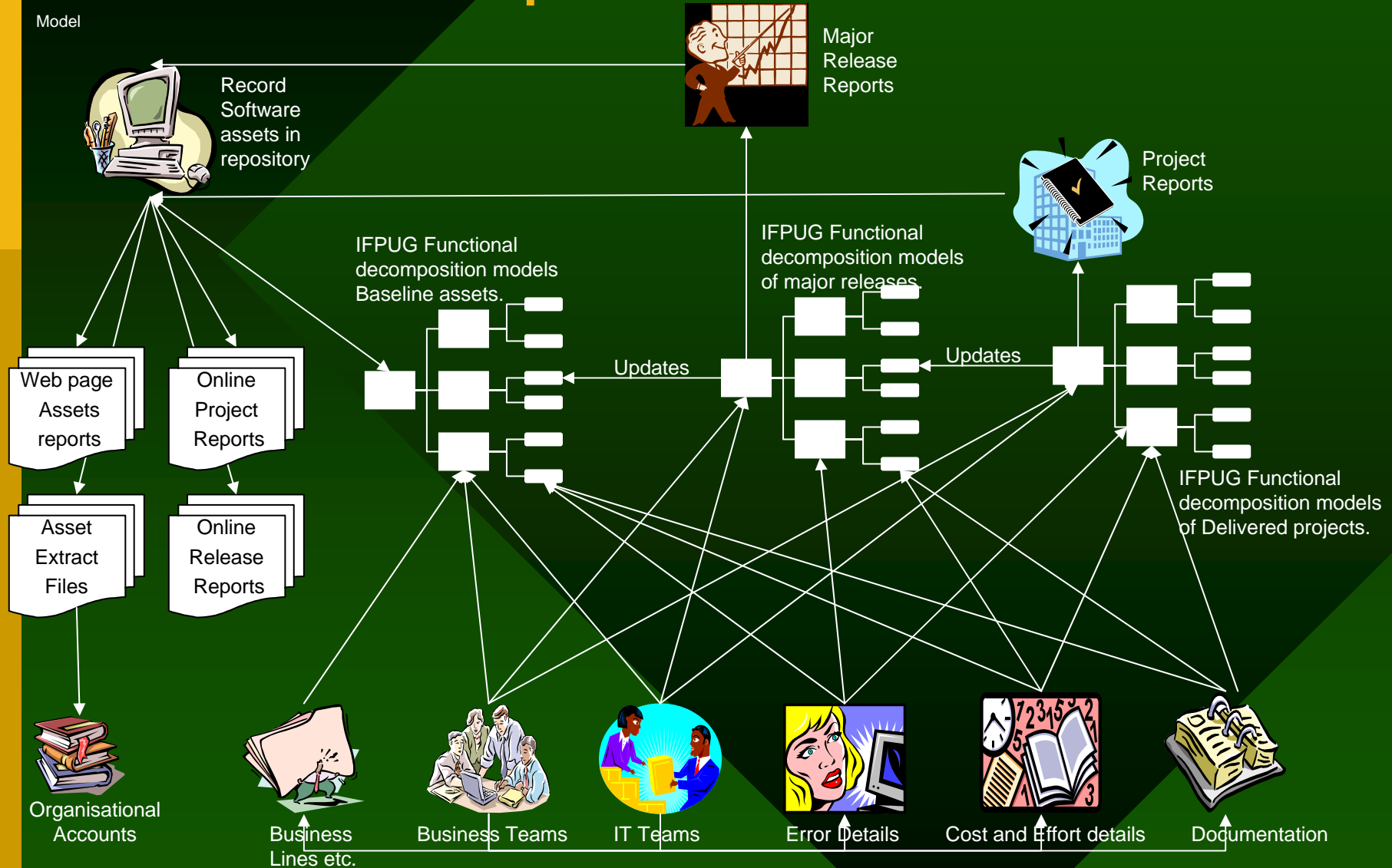


Partial Implementation

- ✓ Establish the companies software performance figures against elapsed delivery time.
- ✓ Establish the companies software performance figures against effort.
- ✓ Establish the companies software performance figures against cost.
- ✓ Report on the above software performance and lessons learned.
- ✓ The above enables IT benchmarking against similar organisations.

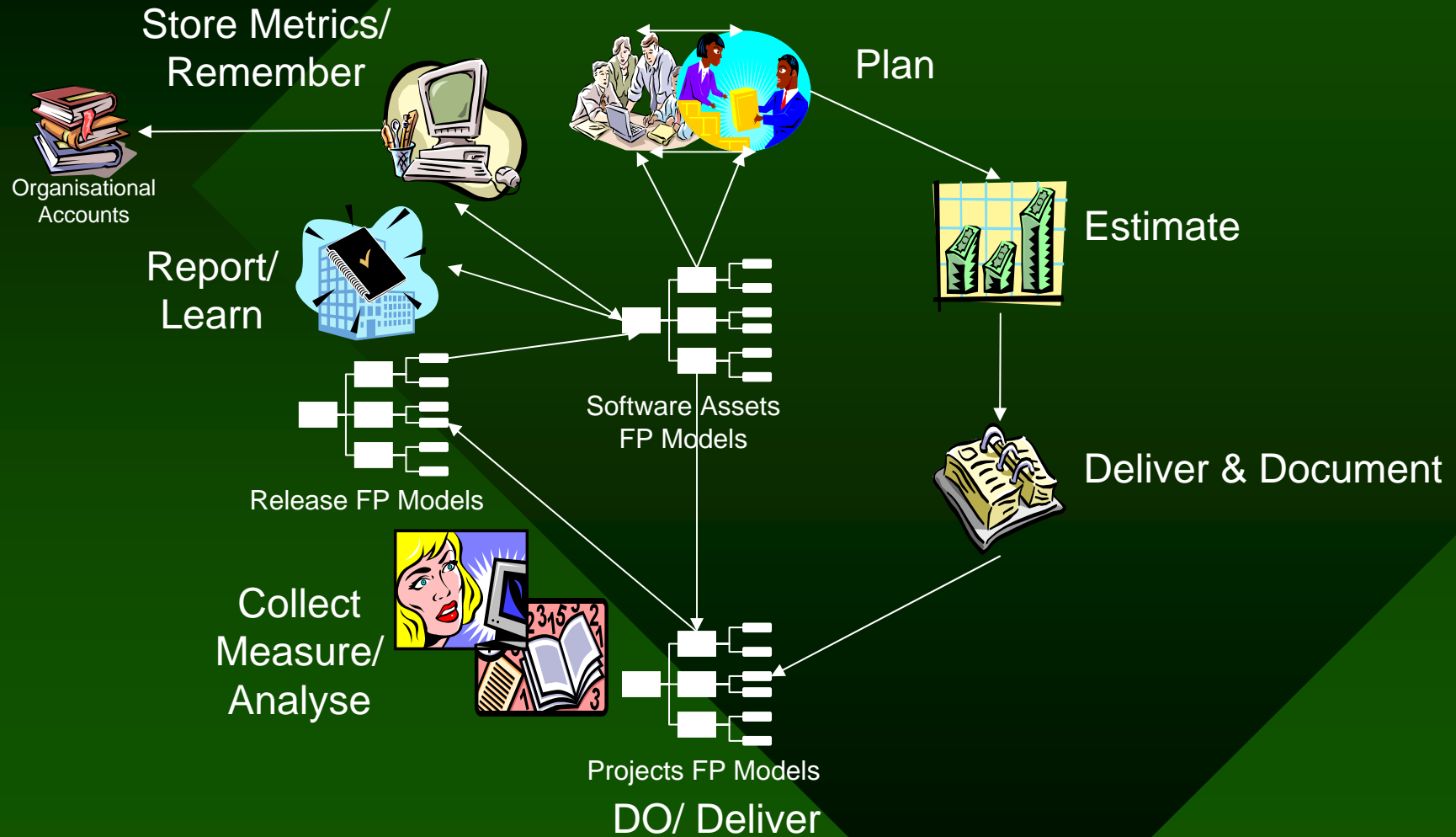


Partial Implementation Model



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Partial Model-Open Loop



Unattained Goals

- ✧ Conduct a comparative cost/effort analysis of other service delivery methods
- ✧ The above will enable a Cost Benefit Analysis of the IT based delivery methods giving a comparative Return On Investment (ROI) figure. "...the productivity paradox is over. The Federal Reserve report titled "Resurgence of Growth in Late 1990s:Is IT the Story?," Federal reserve economists Stephen Oliner and Daniel Sichel (2000) calculated that nearly \$50 Billion, which is two-thirds of the increased productivity, is due to the use of IT at U.S businesses." (IFPUG IT Measurement Practical Advice from the Experts Txt book, published 2002)



Unattained Goals

- ✦ Integrate the use of Functional Analysis into IT's standard estimation processes to help:
 - Improve and quantify user requirements for business and IT.
 - Increase estimation clarity for business and IT.
 - Build up a knowledge base to enable understanding and quantification of the impact of changes at different project stages.



Expect Benefits of Unattained Goals

- Actively manage project scope and functions across each stage of the project in line with Southern Scope Methodology*.

*A review of its effectiveness has found that projects using the southernSCOPE approach:

- complete successfully
- provide customers with software that meets their needs providing a high level of customer satisfaction
- cut the average budget over-run to less than 10%
- provide software value-for-money within the top 25% of industry best practice.



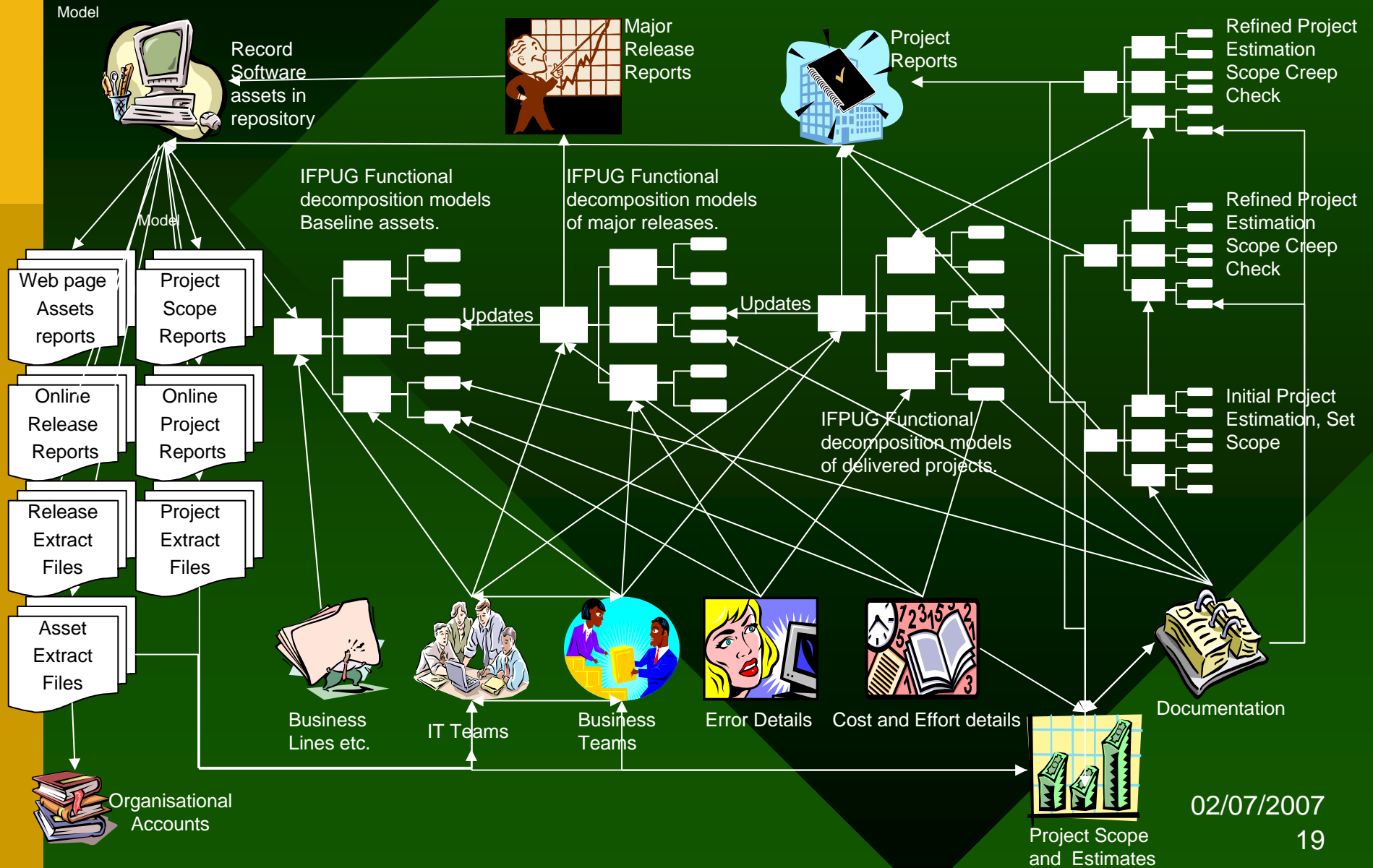
Link to SoutherSCOPE Details:

http://www.egov.vic.gov.au/index.php?env=-innews/detail:m1816-1-1-8 s:n-832-1-0&n_event

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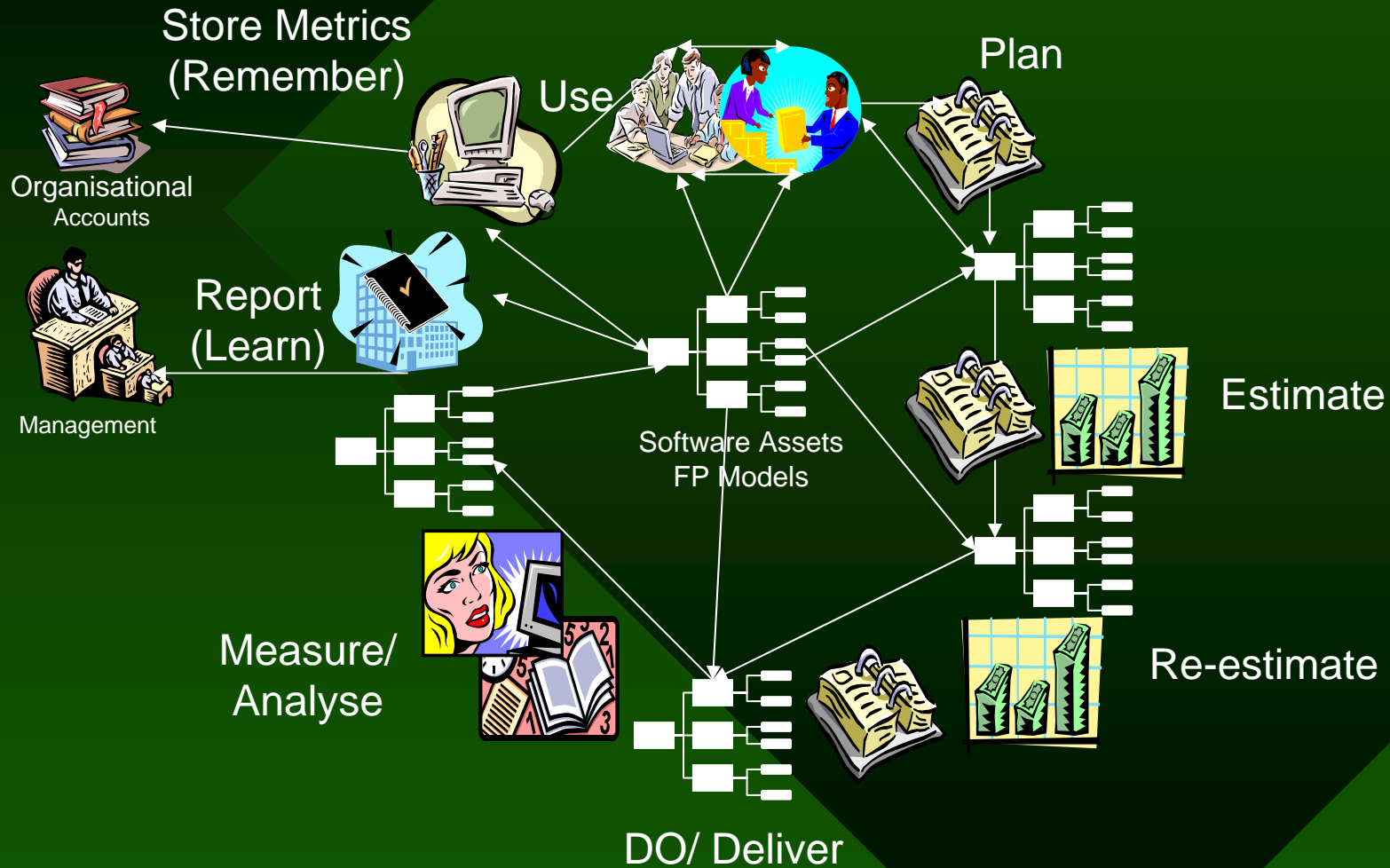
Complete Implementation Model



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Complete Model-Closed Loop

Model



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Key Benefits

- Robust, evidence based decision making backed by verifiable evidence results in better decisions.



Suppositions

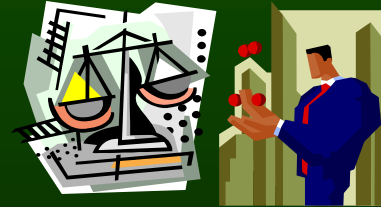
- Having the metrics available to analyse and understand the impacts of decisions in financial terms is the expected way of optimising processes/decisions.
- Virtually any management text book written.

Example

- Given the (FP) unit size of the of the user requirements times your organisations IT performance figures per unit (FP) will give you an accurate estimate of expected development cost, duration, indicative delivery rate and expected error rates. Comparing these against the businesses stated budgetary and delivery time restrictions will give a defensible reality check eliminating the need to rely on 'political' decision making.

Key Benefits

- Assets that are valued and measured can be managed more effectively.



Suppositions

- The existence of accountants & company account departments indicates that there is value in measuring and analysing the monetary position and the effectiveness of management decisions & strategies,
- Virtually any management text book written.

Example

- Capers Jones Software Estimating Rules of Thumb, which are heavily prefaced, such as *Rule 5: Raising the number of function points to the 1.25 power predicts the approximate defect potential for new software projects.*

Key Benefits

- Increased acceptance and understanding of the cost/effort drivers impacting IT (Support teams, Project teams and as a whole) will improve the management and ultimately the effectiveness of IT processes.



Suppositions

- The establishment and evolution of measurement/metrics in comparable industries such as quantity surveying, manufacturing, education, medicine etc.
- The reliance on metrics of process improvement models such as CMMI and others.

Examples

- Capers Jones Software Estimating Rules of Thumb, which are heavily prefaced, such as *Rule 3: Creeping user requirements will grow at an average of 1 percent per month over the entire development schedule.*
- *Sources Unknown:* The cost of functional (scope) additions & changes increases exponentially during the project schedule.

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Key Benefits

- Appropriate levels of funding can be established justified and maintained for IT generally and individual IT teams.



Supposition

- Any production or service activity, including IT, that can clearly demonstrate its position and value (ROI) in the service delivery chain and the links to the organisations revenue streams can more readily defend its budgetary requirements.

Examples

- Capers Jones Software Estimating Rules of Thumb, which are heavily prefaced, such as *Rule 8: Dividing the number of Function Points by 150 predicts the approximate number of personnel required for the application.*

Summary



- Specific actions and the key benefits:
 - Measure, value, manage and report on what IT functions the organisation has.
 - This should improve IT related decision making and promote a clearer understanding and appreciation of what IT teams maintain and their effort/cost drivers.
 - Measure, value and report on what IT functions the business wants and the delivery process.
 - This should improve project decision making and promote a clearer understanding and appreciation of what changes the IT teams deliver and their effort/cost drivers.
 - Benchmark IT performance against comparable organisations.
 - This will clearly highlight areas of positive performance and possible improvement opportunities.



Final Thought



Software may not be our core business, but it is core to our business today....