TOWARDS A FRAMEWORK FOR PROJECT MANAGEMENT INTELLIGENCE (PMInt)

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AGENDA

• Background
• Purpose of the study
  • Foundation of Project Management Intelligence (PMInt) Framework
• Business Intelligence (BI) Architecture
• PMInt Architecture Adapted from BI’s
• Elements of the PMInt Architecture
  • PMInt in action – A scenario on turnover of project members
• Benefits of the proposed PMInt Framework
• Conclusion
BACKGROUND

• Hans and Mnkandla (2013) argue that just like business managers depend on BI to improve business performance, ICT project managers should have PMInt tools similar which will enable them to deal with continuously changing and complex software project environment which is similar to a business environment.

• PMInt is ‘The art and science of creating knowledge from available project information through the systematic process which involves collection, analysis, communication and management, which will enable better project decisions to meet project requirements.’ (Hans and Mnkandla, 2013:1174).
PURPOSE OF THE STUDY

• The concept of project management intelligence is a new one and therefore there is a need for development of sound frameworks and models to support PMInt.

• To close this gap therefore this study is proposing a project management intelligence (PMInt) framework.
A study by Hans and Mnkandla (2013) argues that project intelligence (PM\textit{Int}) tools should be modelled on business intelligence (BI) tools. Based on this study then PM\textit{Int} framework is should be founded on BI framework. Firstly, the core of BI is the \textit{gathering}, \textit{analysis} and \textit{distribution} of information. Secondly, the objective of BI is to \textit{support the strategic decision-making process} (Martin, Laksmi and Venkatesan, 2013).
According to Martin, Laksmi and Venkatesan (2013) a BI system consists of:
- decision support capabilities,
- query and reporting,
- online analytical processing (OLAP),
- statistical analysis,
- knowledge management capabilities,
- forecasting and
- data mining.
BI ARCHITECTURE

Figure 1 – Typical Business Intelligence Architecture. Adapted from Chaudhuri, Dayal and Narasayya (2011)
PM\textit{Int} ARCHITECTURE ADAPTED FROM BI’S

Figure 2 – Project Management Intelligence (PM\textit{Int}) Architecture.
**Elements of the PMInt architecture**

**PMInt data sources**

- **Internal data sources**: Project data sources might not be as many as those found in BI because projects might not necessarily need data from all data sources of the business.
  - For example, projects that an organization might be running may not need data from the sales department database.

- **External data sources**: PMInt tools also need data from key external project stakeholders, such as suppliers and sponsors.

- **Online social media** are critical data sources as it might want to establish opinions/feelings of some of its project stakeholders with regard to certain project aspects.
Extract, Transform and Load (ETL)

- The extraction, transformation and loading processes of data from different data sources ensure that the data stored in the data warehouse is credible for accurate and quality analysis as well as reporting.

- **Data manipulation**: project managers need online analytical processing, data mining, project progress and performance reporting and text analysis tools to gain insight on various project aspects.
  - Analytical information or trends provided by the earned value management (EVM) technique is limited to triple constraint data of a project and does not provide any other useful information on other aspects (e.g. assessing project member’s behavior) of a project that might be of interest to a project manager.
PMInt IN ACTION – A SCENARIO ON TURNOVER OF PROJECT MEMBERS

Figure 3 – A scenario on project members’ turnover
THE BENEFITS OF THE PMInt FRAMEWORK

Benefits are in three-fold:

• It provides guidelines for the development of project management intelligence tools.

• The framework advances the theories for practice in the project management discipline.

• It also highlights some of the intelligent tools which project managers need in order to improve their decision-making process and deliver successful projects.
CONCLUSION

• Many of the components of the BI architecture presented above were adapted to the PM/Int architecture with minor modifications on some of them.

• This ‘natural’ mapping and adaptation should not be a surprise given that ICT projects are business constructs and their environments are also similar as discussed by Hans and Mnkandla (2013).
REFERENCES


