

## Project Controls in the C21 - What works / What's fiction -

Melbourne University  
25<sup>th</sup> August 2008

Patrick Weaver PMP, FAICD, FCIQB.  
patw@mosaicprojects.com.au

1

Project Controls in the C21



## Agenda

- Introduction
- Myth Busters
- Complexity & Uncertainty
- Collaborative Leadership
- The Way Forward
- Conclusions

2

Project Controls in the C21



## Introduction

- This paper is a brief summary of some 10 years thought
- Links to earlier papers are included
- The challenge is to the current ideology, not the value of PM processes
- In the future PM will need a different focus - on people and collaboration

3

Project Controls in the C21



## Introduction

- Scheduling is NOT WORKING
  - Anyone can be a scheduler
  - Focus on tools not project outcomes
  - Focus on control rather than prevention
- 60% to 80% of projects run late!
- Incompetent tools dominate the market
  - MSP's default is to NOT move incomplete work after 'Time Now' / Data Date

4

Project Controls in the C21



## Introduction

- Industry responses & consequences:
  - 'New' methodologies being created:
    - Critical Chain
    - RD-CPM™ - see [www.fplotnik.com](http://www.fplotnik.com)
    - Momentology - see Murray Woolf's book [www.mosaicprojects.com.au/Books.html#books](http://www.mosaicprojects.com.au/Books.html#books)
  - Scheduling devalued to a record keeping process (time and cost)
  - Schedulers input to strategic decisions is virtually ignored on most projects

5

Project Controls in the C21



## Introduction

- The real issue is people
  - Training schedulers virtually stopped from the 1980s through to the 2000s\*
  - What training there was focused on tools
  - Assumption: 'Anyone can schedule'
- The situation is changing
  - Practice Standard + SEI (Scheduling Excellence Initiative)
  - PMI-SP Certification

\* See: A Brief History of Scheduling - Back to the Future  
[www.mosaicprojects.com.au/Resources\\_Papers\\_042.html](http://www.mosaicprojects.com.au/Resources_Papers_042.html)

6

Project Controls in the C21



## Project Management Myths

- # Projects exist – **they don't**
- # The future is controllable – **it isn't**
- # That 'pieces of paper' can control things – **they can't**

7

Project Controls in the C21



## Myth #1 – Projects Exist

- Every standard treats 'projects' as naturally occurring phenomena
  - Projects exist
  - They have identifiable characteristics
  - Because they exist they need managing
- The reality is different!

8

Project Controls in the C21



## Myth #1 – Projects Exist

- People (stakeholders) create, change and close projects
  - They can choose to have or not to have a project (other delivery options exist)
  - They determine the scope of the project
  - They decide how to manage the project

See: Project Fact or Fiction (Will the real Projects please stand up!)  
[http://www.mosaicprojects.com.au/Resources\\_Papers\\_007.html](http://www.mosaicprojects.com.au/Resources_Papers_007.html)

9

Project Controls in the C21



## Myth #1 – Projects Exist

- Useful current thinking – Projects as Temporary Knowledge Organisations
  - TKOs focus on the people doing the work
- Thinking of projects as a temporary 'creation of convenience' by their stakeholders changes much!

See: A Simple View of 'Complexity' in Project Management  
[http://www.mosaicprojects.com.au/Resources\\_Papers\\_070.html](http://www.mosaicprojects.com.au/Resources_Papers_070.html)

10

Project Controls in the C21



## Myth #2 – Controlling The Future

- Projects are about altering a 'future state'
  - Turning a block of land into a building
- This 'future' will not occur unless people take action to make it happen
- But it is always uncertain and risky

See: Risk Management and Complexity Theory - The Human Dimension of Risk  
[http://www.mosaicprojects.com.au/Resources\\_Papers\\_072.html](http://www.mosaicprojects.com.au/Resources_Papers_072.html)

11

Project Controls in the C21



## Myth #2 – Controlling The Future

- The future cannot be controlled
  - If it could every bookmaker would go broke!
- The future outcome (eg the building) is created by the thousands of discrete decisions and actions of the people involved in the project 'team' (or TKO)
- **These decisions can be influenced!**

12

Project Controls in the C21



## Myth #2 – Controlling The Future

**The future is not some place we are going to, but one we are creating. The paths to it are not found but made, and the making of those pathways changes both the maker and the destination.**

Commission for the future (Australia).

**The only useful, pro-active role for 'project control tools' is to help influence decisions to the overall benefit of the project's stakeholders**

13

Project Controls in the C21



## Myth #3 – Project Controls

- Control systems cause a change
  - The 'controls' on your car
- Project 'control tools' don't control anything
  - Schedules don't control time
  - Cost plans and EV don't control cost
- But they can influence people

14

Project Controls in the C21



## Myth #3 – Project Controls

- **CPI 'stability'** – at the 20% stage of the project there is a 90% probability the final CPI will not vary by more than  $\pm 10\%$  and will probably get worse (ie, final cost is likely to be in the range EAC to EAC+10%)
- This implies 'control' and certainty

15

Project Controls in the C21



## Myth #3 – Project Controls

- **Myth busted** – see: Henderson & Zwikael, **Does Project Performance Stability Exist? A Re-examination of CPI and Evaluation of SPI(t) Stability**  
For more visit the PMI Sydney Chapter Website: <http://sydney.pmichapters-australia.org.au/>  
Click "Education," then "Presentations and Papers" for .pdf copies

16

Project Controls in the C21



## Myth Buster - Conclusions

- Most project failures are caused by either:
  - Committing to an impossible objective (ie no planning)
  - Believing the project planning is infallible and controls the future
- **How did we get here?**

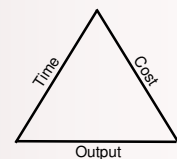
17

Project Controls in the C21



## The Past - PM Theory

- Based on the 'Iron Triangle'
- Cost control defined in the C14<sup>th</sup>
- Scope control (output) by C18<sup>th</sup>
- Time control:
  - Bar Charts 1786
  - CPM 1957
- Iron Triangle 1969



See: A Brief History of Scheduling

[http://www.mosaicprojects.com.au/Resources\\_Papers\\_042.html](http://www.mosaicprojects.com.au/Resources_Papers_042.html)

18

Project Controls in the C21



## PM Philosophy

- The underpinning ideas that allowed the development of 'Western' management can be traced back to the Protestant reformation of the 15th century
- Key philosophies from this time include:
  - Reductionism
  - Individualism / Liberalism
  - The 'PWE' (Protestant Work Ethic)

See: The Origins of Modern Project Management  
[http://www.mosaicprojects.com.au/Resources\\_Papers\\_050.html](http://www.mosaicprojects.com.au/Resources_Papers_050.html)

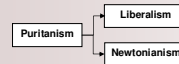
19

Project Controls in the C21



## PM Philosophy

- The Protestant reformation gave rise to the Puritan Movement
- Liberalism includes the ideas of capitalism and the division of labour
- Newtonianism marks the era of scientific enquiry



For a full discussion of this diagram see 'The impact of Puritan ideology on aspects of project management'. International Journal of Project Management 25 (2007) 10-2015

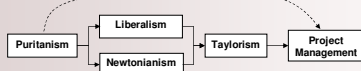
20

Project Controls in the C21



## PM Philosophy

- 'Scientific Management' builds on these ideas and focuses on increased productivity
- The ideas from 'Scientific Management' underpin most of the 'hard skills' of modern project management



For a full discussion of this diagram see 'The impact of Puritan ideology on aspects of project management'. International Journal of Project Management 25 (2007) 10-2015

21

Project Controls in the C21



## PM Philosophy

- The old paradigms based on ideas in
  - Newtonianism / Enlightenment philosophies
  - Understandable through study of its parts
  - Mechanistic view of cause and effect
  - Linear change
  - Predictable and controllable

- **But these ideas are not working!**

See: The Paradox of Project Control in a Matrix Organisation  
[http://www.mosaicprojects.com.au/Resources\\_Papers\\_028.html](http://www.mosaicprojects.com.au/Resources_Papers_028.html)

22

Project Controls in the C21



## Complexity and Uncertainty

- Considers the project team as a 'complex adaptive system' (capable of learning)
- Social networks within and around the project are created and adapt by the: complex responsive processes of relating (CRPR) (communicating and organising)
- The future is 'under perpetual construction' by the team

See: A Simple View of Complexity in Project Management  
[http://www.mosaicprojects.com.au/Resources\\_Papers\\_070.html](http://www.mosaicprojects.com.au/Resources_Papers_070.html)

23

Project Controls in the C21



## Complexity and Uncertainty

- Accepting uncertainty changes the purpose of project 'control tools'
- Schedules, cost plans etc are:
  - Rich symbolic languages
  - Used to communicate (relate) complicated ideas, to
  - Help the team organise in the optimum way
- The team works to achieve its objectives

See: Getting the 'soft stuff' right – Communicating for effect  
[http://www.mosaicprojects.com.au/Resources\\_Papers\\_055.html](http://www.mosaicprojects.com.au/Resources_Papers_055.html)

24

Project Controls in the C21



## Collaborative Leadership

- The control theories of 'Scientific Management'
  - May work for simple manual tasks
  - Fail completely for intellectual tasks (Knowledge workers)
- Demands new roles for our 'control tools' in the 21<sup>st</sup> century

25

Project Controls in the C21



## Collaborative Leadership

- Assumes the project team is a 'TKO' with each member bringing knowledge and capability to the work of the project
- The team through CRPR are continually making decisions that lead to actions (project work)
- Team members need motivating and leading and their actions coordinating

26

Project Controls in the C21



## Collaborative Leadership

- Influence is achieved by:
  - Developing effective relationships
  - Communicating relevant information
- The understanding and actions of each person in the TKO is influenced by
  - The current situation (information + relationships)
  - Their past experiences & cultures
- The next slides focus on 'scheduling' but the ideas apply equally to cost and EV

27

Project Controls in the C21



## Schedules are 'good for'

- Developing and testing the optimum delivery strategy for a project
  - Sequencing the WBS 'work packages'
  - Coordinating & optimising the flow of work
- Providing a valid time baseline for further analysis (Earned Value, Earned Schedule, etc)

For a definition of 'good scheduling practice see:  
**The Practice Standard for Scheduling (PMI)**  
<http://www.mosaicprojects.com.au/Books.html>

28

Project Controls in the C21



## Schedules are 'good for'

- Assisting in day-to-day decision making
  - Resolving dilemmas
  - Evaluating the consequences of change
  - Testing ideas
  - Communicating strategy & setting objectives
- OR at least  
**'good schedules are good for...'**

29

Project Controls in the C21



## Schedules are 'not good for'

- Accurately predicting end dates
  - Schedules do not 'scale' remaining durations based on performance to date
  - Earned Schedule solves this problem
- Controlling work at the 'coal face'
  - You need people to do this
  - There are too many detailed decisions to put everything in the schedule

30

Project Controls in the C21



### Scheduling's 'Client'

- The Project Manager should be the primary user of schedule information
  - To decide on the project's strategy
  - To coordinate workflows and balance resource demands
  - To test decisions and resolve dilemmas
- Uses that distract from this primary purposes damage the project

31

Project Controls in the C21



### Scheduling's 'Client'

- The schedule sets the agreed objectives for the project team (TKO)
- The team make minute by minute decisions to achieve the agreed objectives in the schedule (CRPR)
- Uses that distract from this primary purposes damage the project
  - There are many damaging influences....

32

Project Controls in the C21



### Damaging Influence #1

- Making a detailed schedule into a 'contract document'
  - This distorts the schedule as parties manipulate data to 'political' ends
    - Adding links to 'lock in' anticipated delays
    - Manipulating the location of the 'Critical Path'
  - Prevents sensible changes as 'reality' unfolds
    - Changes de-value the 'credibility' of the unaltered schedule jeopardising 'claims'

See: The Meaning of Risk in an Uncertain World

[http://www.mosaicprojects.com.au/Resources\\_Papers\\_040.html](http://www.mosaicprojects.com.au/Resources_Papers_040.html)

33

Project Controls in the C21



### Damaging Influence #1

- Many contracts prohibit or restrict changes to the schedule
- Making the 'best of a bad job':
  - See the 'Delay and Disruption Protocol'<sup>1</sup>
  - Separate the 'real' schedule from the contract version
  - Recognise 'float' is an artificial construct of CPM<sup>2</sup>

1. See: <http://www.eotprotocol.com> (Free download)

2. See: Float – Is It Real?

[http://www.mosaicprojects.com.au/Resources\\_Papers\\_043.html](http://www.mosaicprojects.com.au/Resources_Papers_043.html)

34

Project Controls in the C21



### Damaging Influence #2

- Excessive detail - Schedules may have:
- Adequate detail for a collaborative 'coordinated' approach to scheduling **OR**
- Finite detail to 'control' the work? **BUT**
- 'Project Control Systems cannot control anything' (they can only provide guidance)

35

Project Controls in the C21



### Damaging Influence #2

- Excessive detail
  - Hides useful information and slows information flows
  - Prevents the easy testing of ideas by 'what if' changes
  - At best shows where people are 'failing' to meet the program (even if it is wrong)
  - Does not improve 'accuracy'

See: The Cost of Time – or who's duration is it anyway?

[http://www.mosaicprojects.com.au/Resources\\_Papers\\_009.html](http://www.mosaicprojects.com.au/Resources_Papers_009.html)

36

Project Controls in the C21



## Damaging Influence #2

- The human brain can manage around 7 pieces of data at one time (typically between 5 and 9)
- Command and Control is an outdated philosophy (McGregor 1960, Peter Drucker, etc)
- The only purpose for excessive detail is to attempt to control the uncontrollable

37

Project Controls in the C21



## Damaging Influence #3

- Promising the Impossible
- Scheduling has been sold as:
  - 'A control tool' – nothing written on paper will 'control the future'
  - A precise statement of fact 'the contract program'
  - As having accurately calculated durations

See: 'The Cost of Time - or who's duration is it anyway?':

[http://www.mosaicprojects.com.au/Resources\\_Papers\\_009.html](http://www.mosaicprojects.com.au/Resources_Papers_009.html)

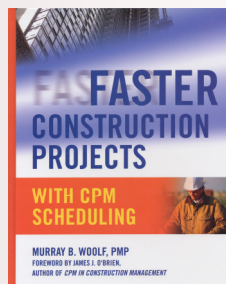
38

Project Controls in the C21



## Damaging Influence #3

- For more on this read:  
Faster Construction  
Projects with CPM  
Scheduling  
By: Murray B. Woolf



- He has a whole new set of ideas to play with

Follow the link from: <http://www.mosaicprojects.com.au/Books.html#books>

39

Project Controls in the C21



## The Way Forward

- Project Management is evolving into a profession (slowly)
- There are a range of standards published
- There are a range of credentials offered
- Most PM job applicants now require a 'qualification' to be accepted for interview (but not for scheduling jobs)

40

Project Controls in the C21



## The Way Forward

- PMI is a leading 'Project Management' standards developer
  - PMBOK (over 2 million in circulation)
  - Standards for Program and Portfolio Mgt.
  - Practice Standards for:
    - Scheduling
    - EV, WBS, etc
  - OPM3 for organisational maturity, etc

41

Project Controls in the C21



## The Way Forward

- Practice Standard for Scheduling
  - Describes an effective scheduling methodology
  - Provides a quantifiable means for assessing the maturity of a schedule model
  - Available from PMI Melbourne for \$71.50
- Scheduling Excellence Initiative

[www.pmicos.org/sei/COS\\_Website/mainpages/seiindex.html](http://www.pmicos.org/sei/COS_Website/mainpages/seiindex.html)



42

Project Controls in the C21



## The Way Forward

- PMI is the leading Project Management certification agency world wide
  - PMP: project managers (1984)
  - CAPM: project team members (2003)
  - PgMP: Program managers (2007)
- PMI-SP: Scheduling Professional New in 2008

43

Project Controls in the C21



## The Way Forward What's Mosaic doing?

- We are developing a free resource at [www.mosaicprojects.com.au/Planning.html](http://www.mosaicprojects.com.au/Planning.html)



44

Project Controls in the C21



## The Way Forward What's Mosaic doing?

- We have updated our basic 5-STEPS scheduling course to align with the Practice Standard
  - Initial workshops in Qld & Singapore look like sell outs.....
- We will be offering PMI-SP training in Q2 of 2009
- We are pressuring PMI for an entry level certification

45

Project Controls in the C21



## Scheduling Summary

- A focus on 'using' the schedule should emphasise
  - Collaboration & Agreement
  - Coordination and timely information
  - The ability to adapt to changing circumstances quickly
  - Supporting the PM Team (TKO) with useful information

46

Project Controls in the C21



## Scheduling Summary

- But this needs:
  - 'Alliance' type contracting
  - Collaborative management
  - Skilled schedulers
  - Tools to measure the 'usefulness' of schedules
  - Management and lawyers to understand what's possible and what's not possible

47

Project Controls in the C21



## Conclusions

- The future of PM is predicted to be one that focuses on the 'soft skills'
  - Communications
  - Motivation & leadership
- **Command and control is dead!**
- Uncertainty will be recognised as normal
  - Skills for managing uncertainty will become essential for successful PMs

48

Project Controls in the C21



## Conclusions

- Project control tools will need to become
  - Project collaboration tools
  - Used to help the project manager
  - And the project team members to operate as an effective TKO
- **By providing timely and useful information, NOT masses of irrelevant data weeks after the event**

49

Project Controls in the C21



## Conclusions

- Stakeholder management will be vital (see [www.stakeholder-management.com](http://www.stakeholder-management.com))
- The Paradox of uncertainty:

**By dropping the false expectation of control and certainty, skilled project managers will deliver more consistent and reliable project outcomes**

50

Project Controls in the C21



## Questions Please



**Patrick Weaver PMP**

Email: [patw@mosaicprojects.com.au](mailto:patw@mosaicprojects.com.au)

Tel: 03 9696 8684

Web: [www.mosaicprojects.com.au](http://www.mosaicprojects.com.au)

The **Papers & Resources** section of the Mosaic site has:

- All of the papers referenced in this presentation
- Over 50 other free PM papers

The **Planning & Scheduling** section of the site has information on a wide range of scheduling topics

Download this paper from [http://www.mosaicprojects.com.au/Resources\\_Papers\\_083.html](http://www.mosaicprojects.com.au/Resources_Papers_083.html)

51

Project Controls in the C21

