



The Effective Management of Time

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Outline

- Time is not money!
- Project Planning
- Project Scheduling
- ***The Guide*** – future developments
- Discussion

Time is not money!

- The state of play
 - ICT – Gartner
 - Construction – CIOB
- Time -v- Money
- Skills and Knowledge

The state of play

- ICT – Gartner
- Construction – CIOB
 - *Managing the Risk of Delayed Completion in the 21st Century*
(http://www.mosaicprojects.com.au/PDF/CIOB_TM_report_full.pdf)
- Complex -v- Simple

The Effective Management of Time

Time -v- Money

- Money – keep until you spend
 - Symptom of other successes or failures
- Time – 60 seconds lost every minute
 - Can't change the past
 - Now is too late to change
 - Manage the future

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Burj Khalifa -v- Empire State Building



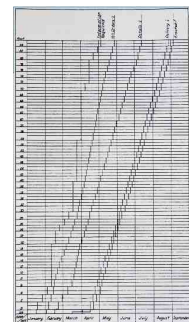
Burj Khalifa Dubai
208 floors in 5+ years

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Empire State Bldg.
completed in 1931

**102 Floors
built in
410 days**



The steel frame
rose at the rate of
four and a half
floors per week



Burj Khalifa -v- Empire State Building

If the Burj Khalifa in Dubai had been built at the same speed as the Empire State Building it would have opened two years earlier!

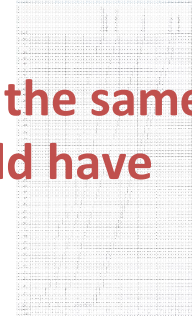


Burj Khalifa Dubai
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Time -v- Money

- Things that don't work!
 - Contract terms and conditions / penalties
 - CIOB Report
 - UK Government metrics (Constructing Excellence)
 - Static contract programs
 - Measure failure
 - Used for claims and court actions after the event

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Skills and Knowledge

- Skills and Knowledge
 - Very few skilled planners and schedulers
 - Not used or respected by management
 - Except for the fights after the event
- A Brief History of Scheduling

http://www.mosaicprojects.com.au/Resources_Papers_042.html

Skills and Knowledge

- Solutions are being developed
 - Definition of good practices
 - Development training and certification
 - Education of management
- These elements are the focus of the balance of this paper

Planning -v- Scheduling

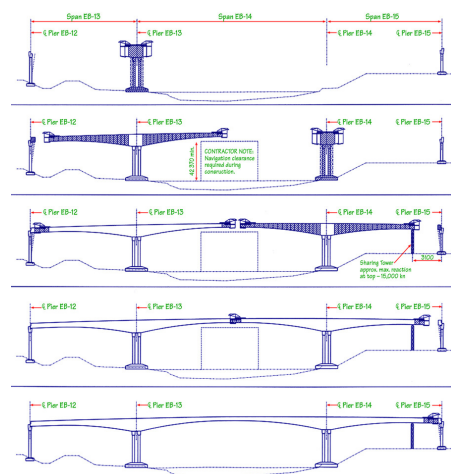
- Project Planning
 - Strategic process
 - Focus on objectives and methods
 - Foundation for scheduling
- Project Scheduling
 - Develop and maintain an effective schedule

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Project Planning

- Precedes Scheduling
- Focuses on methods and Strategy
- Creative - requires skill and knowledge of the project



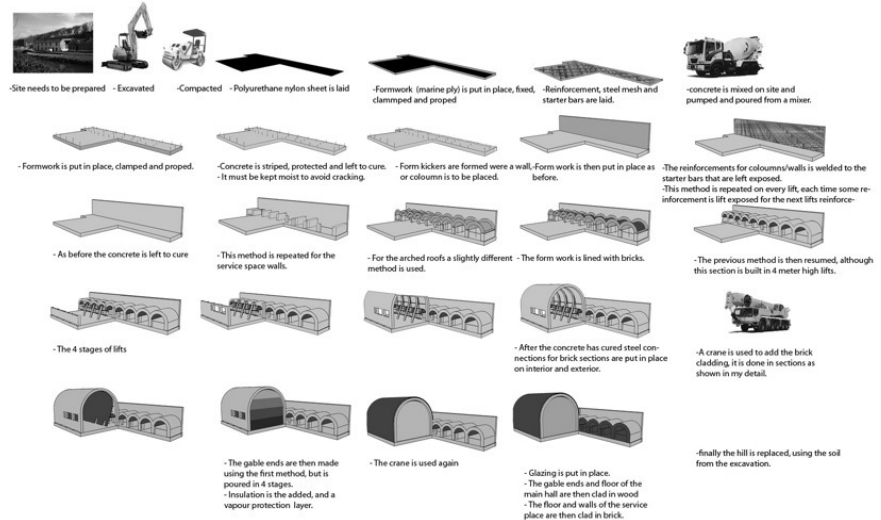
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Project Planning

- Creates Buy-in
- Frames the Schedule



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Project Scheduling

- Requires good knowledge of scheduling
- Understanding of the scheduling tool
- Involves:
 - Designing the schedule
 - Developing the schedule
 - Maintaining the Schedule

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Designing the schedule

- Understanding the Project Scope & Objectives (Planning)
- Determine the optimum update cycle
- Major milestones, gateways and phasing
 - The project life cycle

Designing the schedule

- Schedule users / audience
 - Code and report structures
- Schedule size
 - Heuristics (25 / 600)
 - Control using Schedule Levels

See: Core Papers @ <http://www.mosaicprojects.com.au/Planning.html>

Designing the schedule

- Schedule Levels & Schedule Density

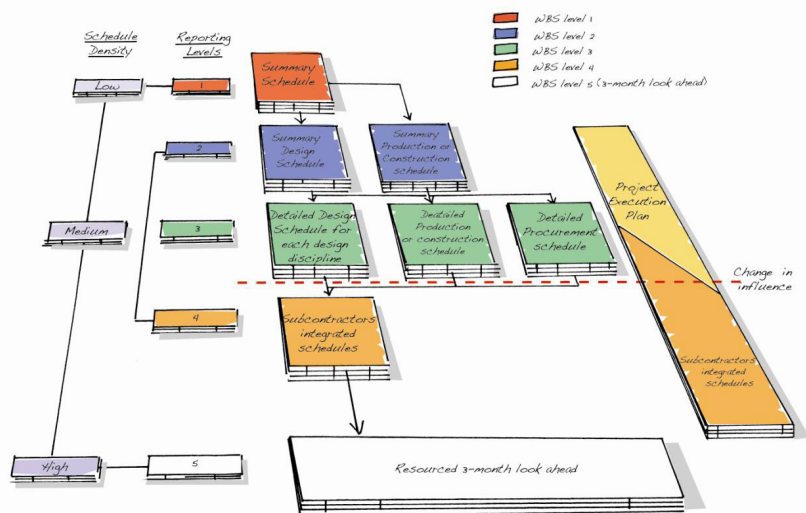


Figure © Guide to Good Practice in the Management of Time in Complex Projects
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Developing the schedule

- Schedule Density
- Sensible Activities
- Practical Logic

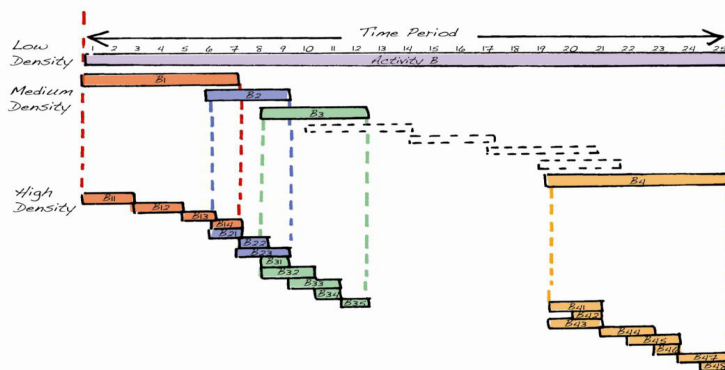


Developing the schedule

- Schedule Density
 - Overall framework is essential for Time Management..... **But**
 - Detail planning requires the people doing the work to be involved (eg, Last Planner)
 - Therefore, add detail when appropriate

Schedule Density

Figures © Guide to Good Practice in the Management of Time in Complex Projects

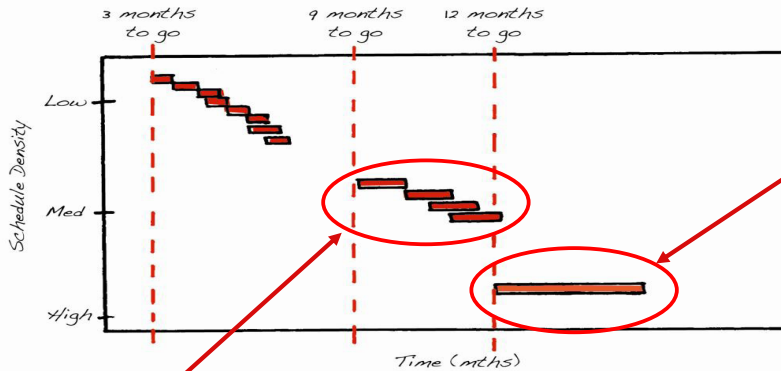


Activities are progressively expanded to greater levels of 'density' as more information becomes available

Unless the work is designed in its entirety and all subcontractors and specialists appointed before any work commences, it is impossible to plan the work in its entirety, in detail at the beginning of a project.

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Schedule Density



Low-density is appropriate for work, which is intended to take place 12 months, or more in the future.

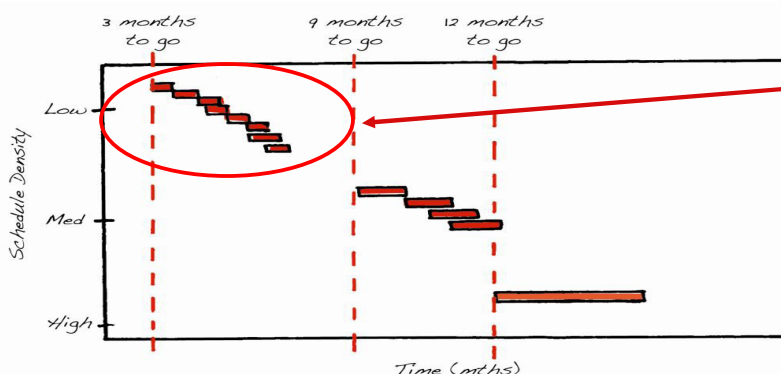
Tasks may be several months in duration

Medium density is appropriate for work, which is intended to take place between 3 and 9 months after the schedule date. At this stage the work should be designed in sufficient detail to be allocated to contractors, or subcontractors. Task durations should not exceed 2 months.

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Schedule Density



High-density scheduling is an essential prerequisite for undertaking work. The schedule is prepared with the people doing the work.

Task durations should be no more than the update cycle

As the density is increased, adjustments to the plan take into account actual performance to date, resources, work content, and other factors necessary to achieve the overall schedule objectives.

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Schedule Density

	Location	Zone	Area	Section	Item	Description	Activity ID
Low Density	A	B	A			Substructures	ABAZZ00010
Medium Density	A	B	A	A		Excavations	ABAAZ00010
	A	B	A	B		Piling	ABABZ00010
	A	B	A	C		Ground beams	ABACZ00010
	A	B	A	D		Floor slabs	ABADZ00010
High Density	A	B	A	C		Ground beams	ABACZ00010
	A	B	A	C	A	Formwork	ABACA00010
	A	B	A	C	B	Reinforcement	ABACB00010
	A	B	A	C	C	Placing concrete	ABACC00010
	A	B	A	C	D	Curing	ABACD00010
	A	B	A	C	E	Strike formwork	ABACE00010
	A	B	A	C	F	Backfill	ABACF00010

The activity coding structure (ID) maps high to medium to low density

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Sensible Activities

- Milestones
 - Zero Duration
 - Marks a significant point or event in a project
 - Start and Finish
 - Other key points

Personal preference – ALL constraints are placed on Milestones

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Activity Identification

- Involve Stakeholders and Team
- Test for completeness
- Keep level of detail consistent with your 'plan for the schedule'
- Identify all Activities before moving onto next stage

Attributes of a 'Good Activity'

- A discrete element of work
- A single person is responsible for managing the performance of the work
- Its description is unique and unambiguous
- The work is capable of proceeding to completion without interruption

Estimate Activity Durations

- Deal with each activity in turn
- Estimate optimum duration for activity
- Consider: the work involved, the ideal crew size & the team's experience
- Involve people who will be responsible actually for 'doing' the work

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Estimate Activity Durations

- High Density - Its duration is less than twice the update cycle (or undividable)
- Be real!
 - For 90% of projects use 'days'
 - Most of the rest 'weeks'

See: The Cost of Time (Durations)-

www.mosaicprojects.com.au/Resources_Papers_009.html

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Developing the schedule

- Practical Logic
 - Organise the activities into a logical sequence
 - Only use 'real logic'
 - Use Finish-Start relationships where possible
 - Keep getting agreement

See: Links, Lags & Ladders -

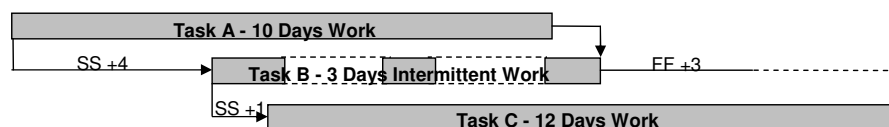
[www.mosaicprojects.com.au/Planning.html#Core Papers](http://www.mosaicprojects.com.au/Planning.html#Core_Papers)

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Links Cause Problems

- Progressive feed (but understand the issues)
 - Use both SS and FF
 - Use Approximation or 'Ladders' if available

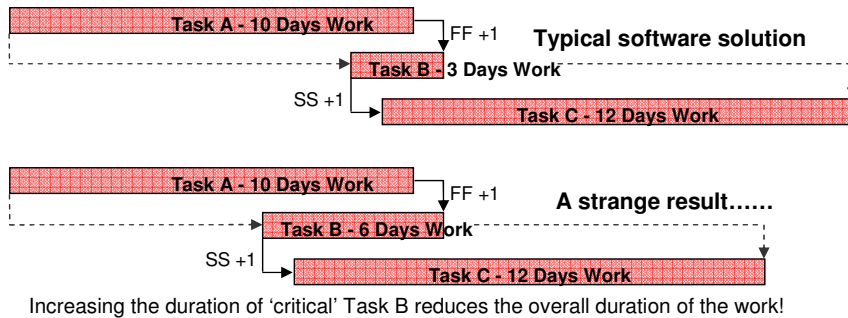


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Links Cause Problems

- But make sure you understand how your system works

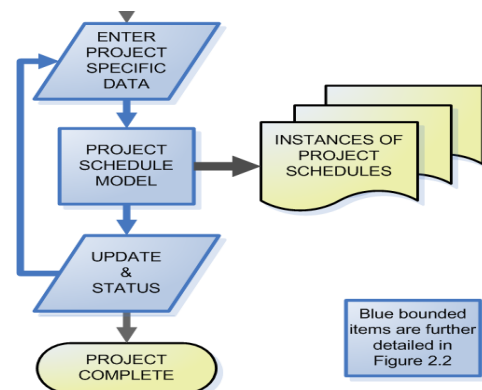


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Maintaining the Schedule

- Establish a baseline
 - At the development stage
 - As part of a re-baseline
- Record actual progress
- Reschedule from 'data date' (or Time Now)



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Maintaining the Schedule

- Edit for accuracy
 - No tool accurately manages all of the issues around partially complete tasks
- Involve both task owners and managers
 - Use 'their data' not yours!

See: Managing for Success - The power of regular updates-
www.mosaicprojects.com.au/Resources_Papers_002.html

Reporting Options

- The major challenge with scheduling is communicating complex data effectively
- This is achieved by effective reporting

See: Seeing the Road Ahead - the challenge of communicating schedule data
http://www.mosaicprojects.com.au/Resources_Papers_106.html

Reporting Options

**Data is not information,
information is not knowledge,
knowledge is not understanding,
understanding is not wisdom.**

Clifford Stoll

See: Beyond Reporting - The Communication Strategy
http://www.mosaicprojects.com.au/Resources_Papers_094.html

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The Guide – future developments

- *Guide to Good Practice in the Management of Time in Complex Projects*
- Educational Framework & Qualification Framework

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The Guide

- *Guide to Good Practice in the Management of Time in Complex Projects*
- Publication November 2010
- Copies available from:
http://www.mosaicprojects.com.au/Books.html#CIOB_Guide

Qualification Framework

- Current Qualification Framework
 - Association for the Advancement of Cost Engineering International (AACE) PSP
 - PMI Scheduling Professional (PMI-SP)
- Both focused on highly experienced schedulers 3 to 5+ years

Education Framework

- Limited training for PMI-SP or AACE
 - Assumed self study by experts
 - Mosaic planning a PMI-SP course for 2011
- Relatively low numbers of credentials awarded

New Developments

- Planning Planet: www.planningplanet.com
 - Developing training materials
 - Developing accreditation process
 - Likely to offer industry based qualifications
 - Entry level certification included

Educational Framework

- CIOB
 - Three levels
 - Based on *The Guide*
 - Certificate courses late 2011

Executive Presentation
Information rather than qualification

Project Time Management Master
Knowledge plus advanced skills and experience
Planning and Scheduling leadership

Project Time Management Professional
Knowledge plus defined skills and experience
Planning and Scheduling capabilities

Certificate in Project Time Management
Examination based – knowledge only

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Conclusion

- Definite trend towards
 - Standardising planning and scheduling
 - Developing training frameworks
 - Accrediting Planners and Schedulers

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Conclusion

- Challenges:
 - Keep training and credentials aligned
 - Gain respect of management
- We can make a difference!

Useful schedule are useful because they are used!

Discussion

- Questions please
- Contact details:
 - Free planning and scheduling resources:
<http://www.mosaicprojects.com.au/Planning.html>
 - Email: patw@mosaicprojects.com.au

Tell us what you think...

- <http://feedback.insync10.com.au>
- Free planning and scheduling resources:
<http://www.mosaicprojects.com.au/Planning.html>