Delivering Effective Schedules Through Effective Planning

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Outline

- The static measurement of failure!
- ***The Guide***
  - Project Planning
  - Project Scheduling
- Developing effective schedules
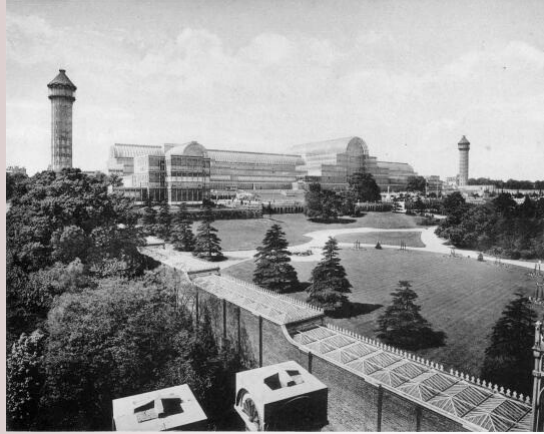 - Standards
  - Education Framework
- Discussion

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Crystal Palace

- We are not so good!
- Crystal Palace……

- Built in 1851

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Crystal Palace
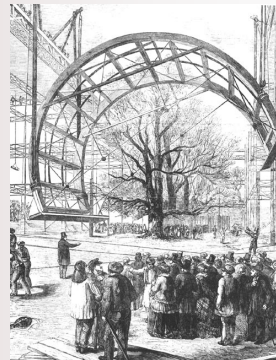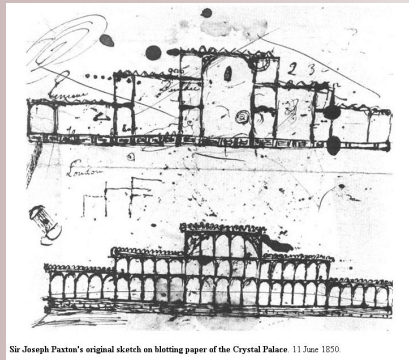
Sir Joseph Paxton's original sketch on blotting paper of the Crystal Palace. 11 June 1850.

The Crystal Palace, was a building the size of a modern shopping mall:
1848 feet [563.3 meters] long, 408 ft [124.4 m] wide and 108 ft [32.9 m] high.

New technology - Prefabricated cast iron was used extensively.

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Crystal Palace

From a rough sketch on blotting paper to the Great Exhibition of 1851 –
How long?

Royal patronage probably helped!!

The Crystal Palace was built in eight and a half months starting on 15 July 1850, opening on 1st May 1851

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Burj Khalifa -v- Empire State Building

102 Floors built in 410 days

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

Burj Khalifa Dubai
208 floors in 5+ years

Empire State Bldg.
completed in 1931

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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
208 floors in 5+ years

Empire State Bldg.
completed in 1931

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

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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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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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Time -v- Money

- CIOB – Construction projects
  - *Managing the Risk of Delayed Completion in the 21st Century*
    http://www.mosaicprojects.com.au/PDF/CIOB_TM_report_full.pdf

- Gartner ICT projects

- Both show around 50% failure rate!

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Skills and Knowledge

- Skills and Knowledge
  - Very few skilled planers 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

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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

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The Guide

- PMI Scheduling Excellence Initiative

- *Guide to Good Practice in the Management of Time in Complex Projects*

THE CHARTERED INSTITUTE OF BUILDING
GUIDE TO GOOD PRACTICE IN THE MANAGEMENT OF TIME IN COMPLEX PROJECTS

WILEY-BLACKWELL   CIOB

- Copies available from:

http://www.mosaicprojects.com.au/Books.html#CIOB_Guide

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The Guide

- Planning -v- Scheduling
- Schedule design
- Schedule Density
- Updating & Maintaining the schedule
- Reporting & Communicating

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Planning -v- Scheduling

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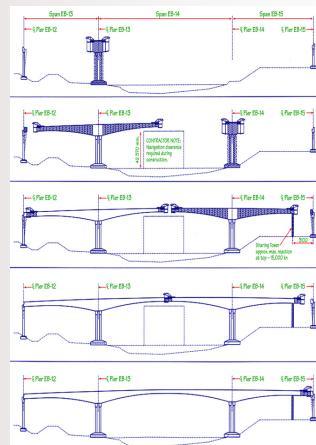 - Develop and maintain an effective schedule

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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 Scheduling

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

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

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Designing the schedule

- Schedule Levels & Schedule Density
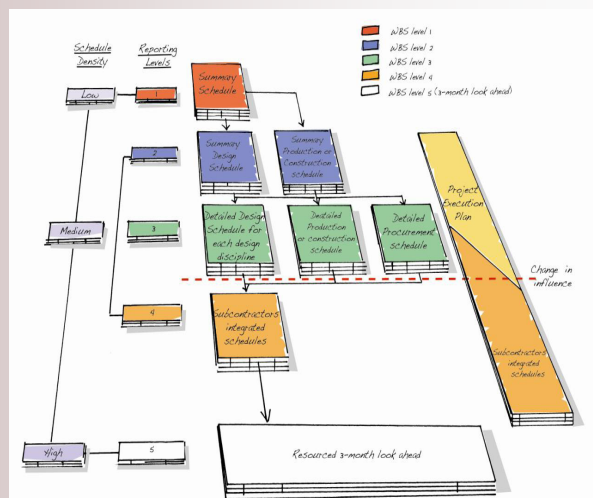
Figure © Guide to Good Practice in the Management of Time in Complex Projects

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Schedule Density

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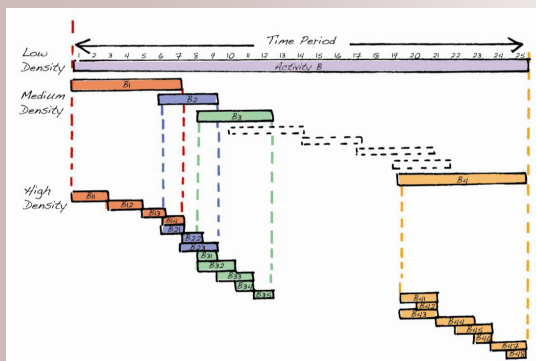 - Therefore, add detail when appropriate

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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.
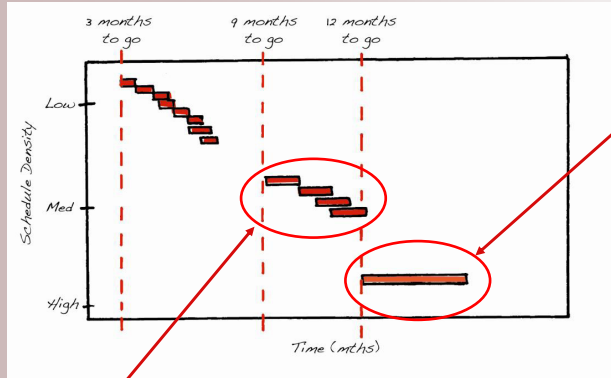
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Schedule Density

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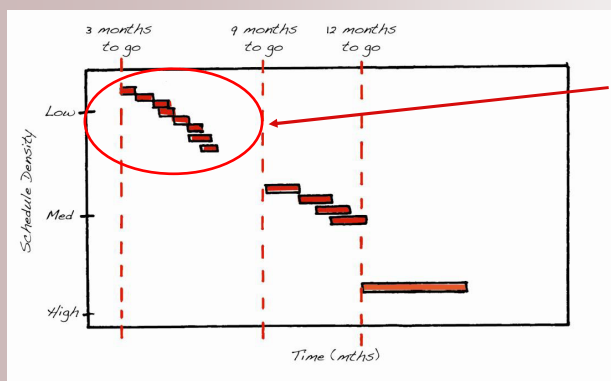
Tasks may be several months in duration

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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Developing the schedule

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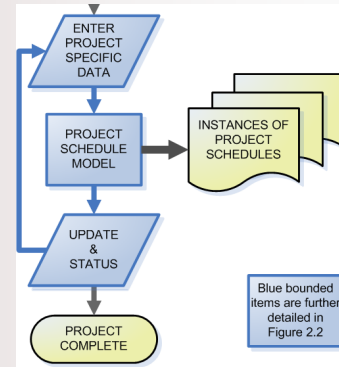 - Keep getting agreement

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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)

ENTER PROJECT SPECIFIC DATA

PROJECT SCHEDULE MODEL → INSTANCES OF PROJECT SCHEDULES

UPDATE & STATUS

PROJECT COMPLETE

Blue bounded items are further detailed in Figure 2.2

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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

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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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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

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Reporting Options

Which map is more useful
If you are looking for the Dojo

'Useful', 'Accurate' and 'Fully Detailed' are not
synonymous and may be contradictory!
Ask for what you need......

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Qualification Framework

This section:

- Current certifications
- Planning Planet
- CIOB Time Management Credentials

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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

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Qualification Framework

- Limited training for PMI-SP or AACE
  - Assumed self study by experts
  - Mosaic's PMI-SP course one of the few available (and in low demand)
- Relatively low numbers of credentials awarded
  - 650 AACE in 6 years
  - 360 PMI-SP in 3 years

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New Developments

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

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Planning Planet

- PPAS –Standard Documents
  - SD 0 Why Plan ?
  - SD 1 Planning, Scheduling and Project Control Methods
  - SD 2 Designing the Schedule
  - SD 3 Creating and Building the schedule
  - SD 4 Maintaining the Schedule
  - SD 5 Using the schedule or Specialism's

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New Developments

- CIOB – Time Management Credentials
  - Three levels
  - Based on *The Guide*
  - Certificate courses late 2011
  - Higher level certifications to follow

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The CIOB Framework
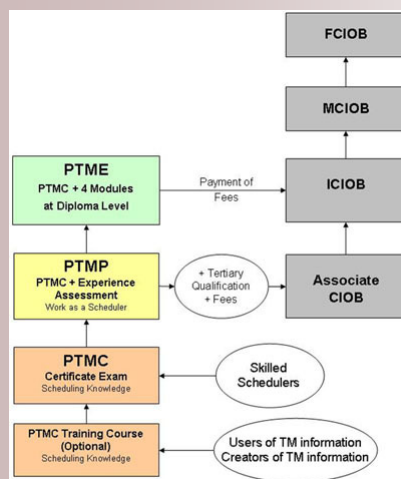
Project Time Management Certificate
PTMC is an on-line multiple choice examination with no prerequisites.

Project Time Management Practitioner
PTMP is an assessed credential based on a pass in the PTMC exam and demonstrated scheduling experience.

Project Time Management Specialist (or Expert)
PTMS is an examined credential.
- Module 1: Major Projects & Integration.
- Module 2: The Time Management Profession.
- Module 3: Schedule assessment and Risk Analysis.
- Module 4: Contracts and Claims.

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CIOB TM Framework

- Examination specifications under development
  - Certificate no industry bias
  - Higher levels Construction industry
- International team (including me)
- CIOB has 190 years of experience as a professional association
- Australian Region and office

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What Mosaic is doing:

- We are developing a free resource at www.mosaicprojects.com.au/Planning.html

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Conclusion

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

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Conclusions

- Solve the 'chicken and egg' conundrum
  - Well trained schedulers can help project managers and advise senior managers
  - But no one is training schedulers
  - Therefore very few people experience the benefits of working with skilled schedulers
  - Consequently they don't know what they are missing
  - And don't invest in training…..

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Conclusions

- We need a management re-education program
  - SOX, etc mandate the need for predictive process like scheduling
  - So why do so many projects have time 'set in stone' before anyone looks at a realistic schedule?
  - Senior managers need to understand the value of skilled schedulers

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Conclusions

- International credentials will help
  - Focused on new planners and schedulers
  - Planning Planet & CIOB are in discussion to normalise or coordinate
- *The Guide* and PMI's Practice Standard provide the framework
- We have the opportunity to reinvigorate the role of planning and scheduling

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Conclusion

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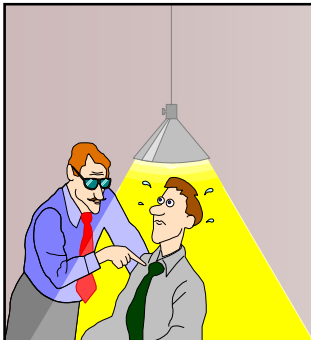 - Gain respect of management
- We can make a difference!

**Useful schedule are useful
because they are used!**

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Discussion

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

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