

The background of the slide is a detailed architectural floor plan. In the top left corner, a desk lamp with a white shade is positioned over the drawing. The drawing itself shows various rooms and dimensions, including a circular feature, a 'STONE WALL', a 'LAUNDRY' room, and a 'BED RM 2' measuring 10'0" x 12'4". Other labels include 'CLO', 'CLO', 'BALCON ABOVE', and 'SLIP'. A large, light blue arrow points from the bottom right towards the center of the drawing. In the bottom foreground, several drafting tools are scattered: a yellow folding ruler, a pair of silver compasses, and three white markers with green, blue, and red caps. A red pen is also visible in the bottom right.

Project Planning and Management

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Getting things done

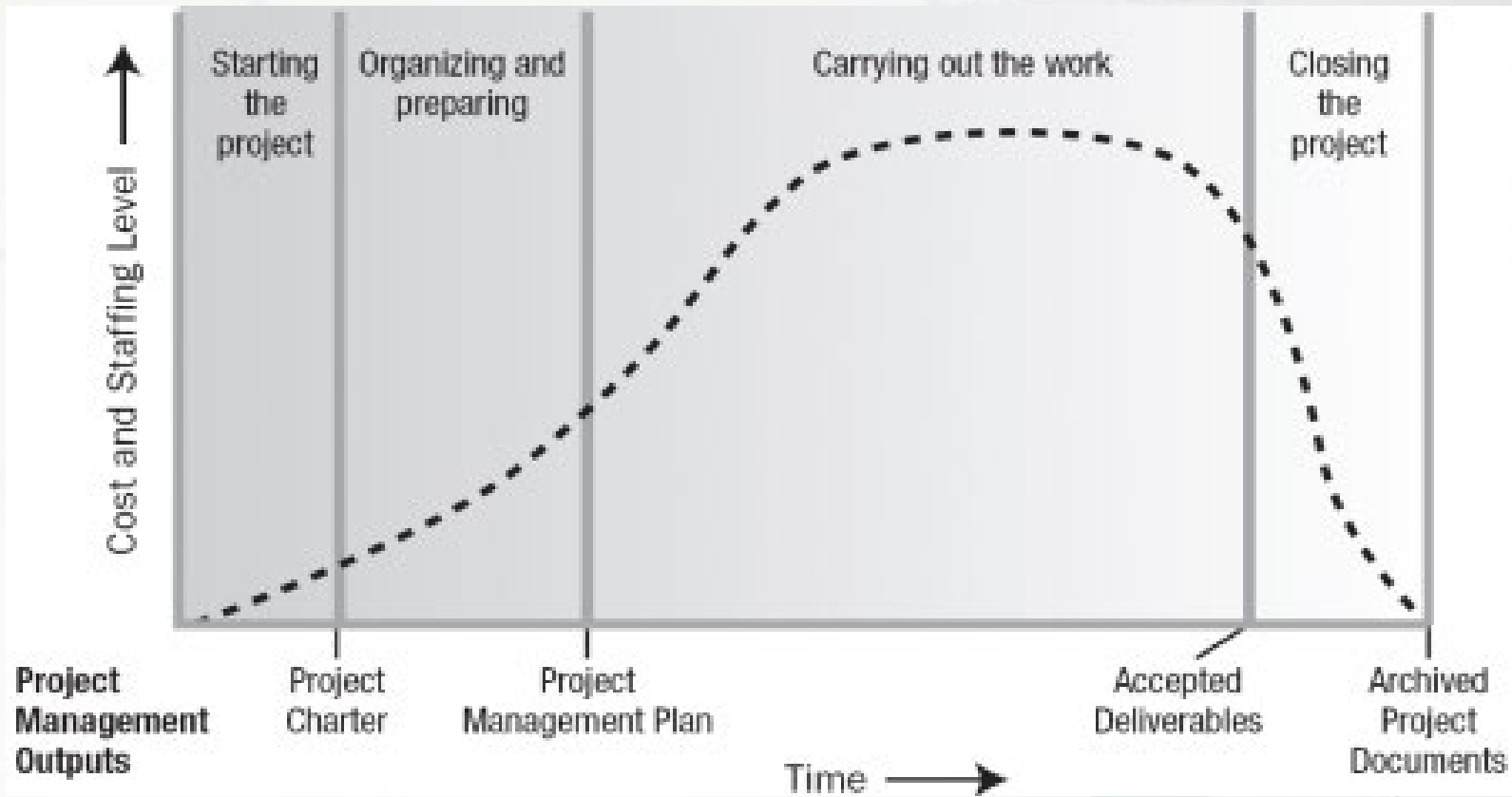
- A manager who doesn't get things done will not be a manager for long
- An organization that does not get things done will not survive for long
- Yet PM skills are rarely taught
- A manager has to be able to manage projects
 - time and money and people
- Project Management Tools help



Tools for consideration

- Gantt charts - simple, but effective graphical presentation
- Critical path method (CPM) - includes mathematical probabilities (early start, late start) etc.
- Program evaluation and review (PERT) uses weighted average durations
- Graphical evaluation and review (GERT) uses probable duration and network interactions

Project Life Cycle



A desk with a lamp, a brick wall, and architectural drawings. The lamp is on the left, casting light on the desk. The brick wall is at the top. The desk surface is covered with architectural drawings and two pens.

Planning 1

- Set the project **start date**
- Set the project **completion date**
 - **Penalties for being late, bonus for early finish?**
- Select the project methodology or project life cycle to be used
- Determine the scope of the project in terms of the phases of the selected project methodology or project life cycle



2

- Identify or select the project review methods to be used (and post project evaluation)
- Identify any predetermined interim **milestones** or other critical dates that must be met.
- List tasks, by project phase, in the order in which they might or **must** be accomplished.
- Estimate the **personnel** necessary to accomplish each task (and tools, space)
- Estimate the personnel available to accomplish each task (reassignment needed? hires? contractors?)

3

- Determine skill level necessary to perform each task
- Determine task dependencies
- Perform project **cost estimation** and cost-benefit analysis
- Troubleshoot, evaluate performance (mid course corrections)



Integration

- Many traditional manufacturing programs separated engineering from design and production, and marketing was even further away
- Hypertherm, Nissan and others have found great benefits from cross-function teams bringing engineers, researchers, marketers and salespeople together
- Cross function teams improve communication, speeds up innovation and avoids and corrects errors better



To build a house

- Home building involves a dance of multiple contractors who have to be sequenced correctly
- The plumber and electrician have to be in before the sheetrock can go up
- The roofer has to finish before the sheetrock can be hung
- Work has to be done the before the inspector arrives for each check-off





More complexity

- Building a home is simple and has been done millions of times (but the process is still being improved!)
- Imagine the increase in complexity for a space launch or new airplane design or a new software program
- Or a project like the Airbus or Boeing jet with pieces made all over Europe or around the world (**delay after delay for both**)



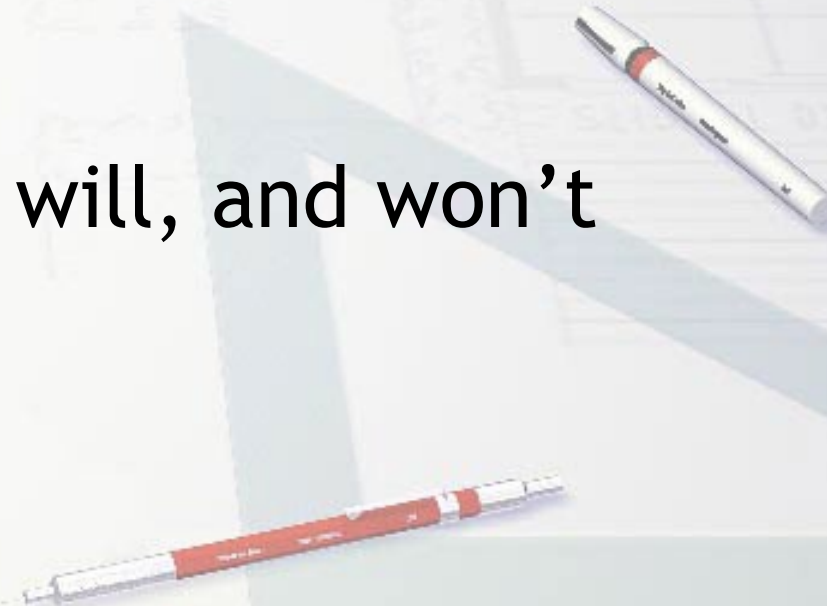
Essential Project Management Tasks

Project Integration

- Plan development
 - Plan execution
 - Plan completion and review
 - Integrated change control
- 
- 




Project Scope

- Initiation
 - Scope planning
 - Scope definition
 - Scope change control
 - Describe clearly what will, and won't be done
- 




Time management

- Activity definition
 - Activity sequencing
 - Activity duration estimation
 - Schedule development
 - Schedule control
- 



Cost management

- Resource planning
 - Cost estimating
 - Cost budgeting
 - Cost control
- 



Quality Management

- Quality planning
- Quality measurement
- Quality assurance
- Quality control
- Quality improvement (Six Sigma)
 - Six sigma is 3.4 defects per million opportunities



People management

- Organizational planning
- Staff recruiting and reallocation
- Training
- Team development
- Monitor morale and enthusiasm



Communication

- Communications planning
- Disaster reaction planning
- Information distribution
- Stakeholder involvement
- Performance reporting
- Administrative closure



Risk Management

- Risk management planning
- Risk identification
- Qualitative risk analysis
- Quantitative risk analysis
- Risk reduction efforts
- Risk response planning
- Risk monitoring and control





Procurement

- Procurement planning
- Solicitation planning
- Solicitation
- Source selection
- Contract administration
- Contract closeout



Integrated and responsive

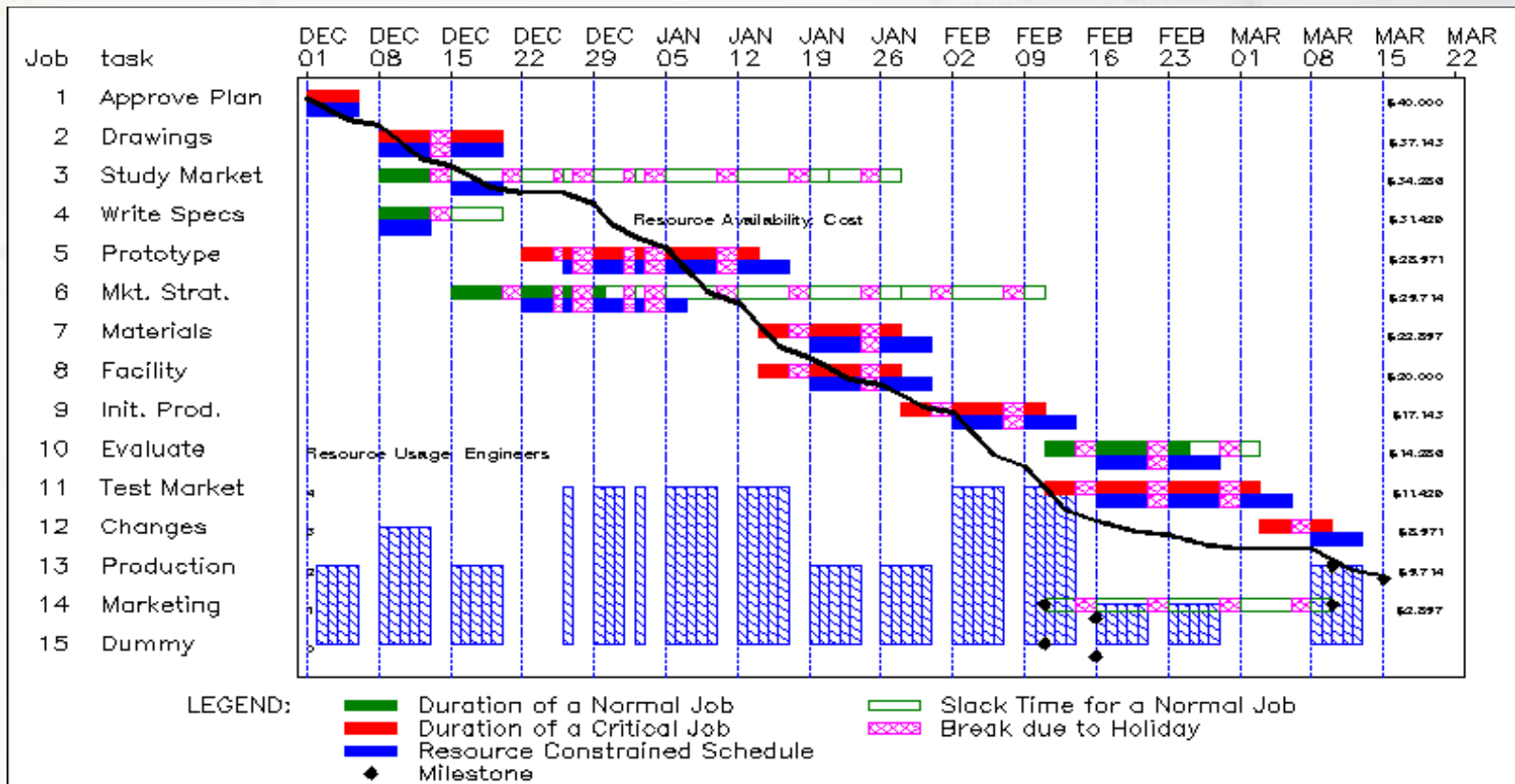
- The goal is to use resources wisely
 - Time, People, Money and other resources are costly - saving waste makes money
 - These efforts must be ongoing - tracked, evaluated and improved
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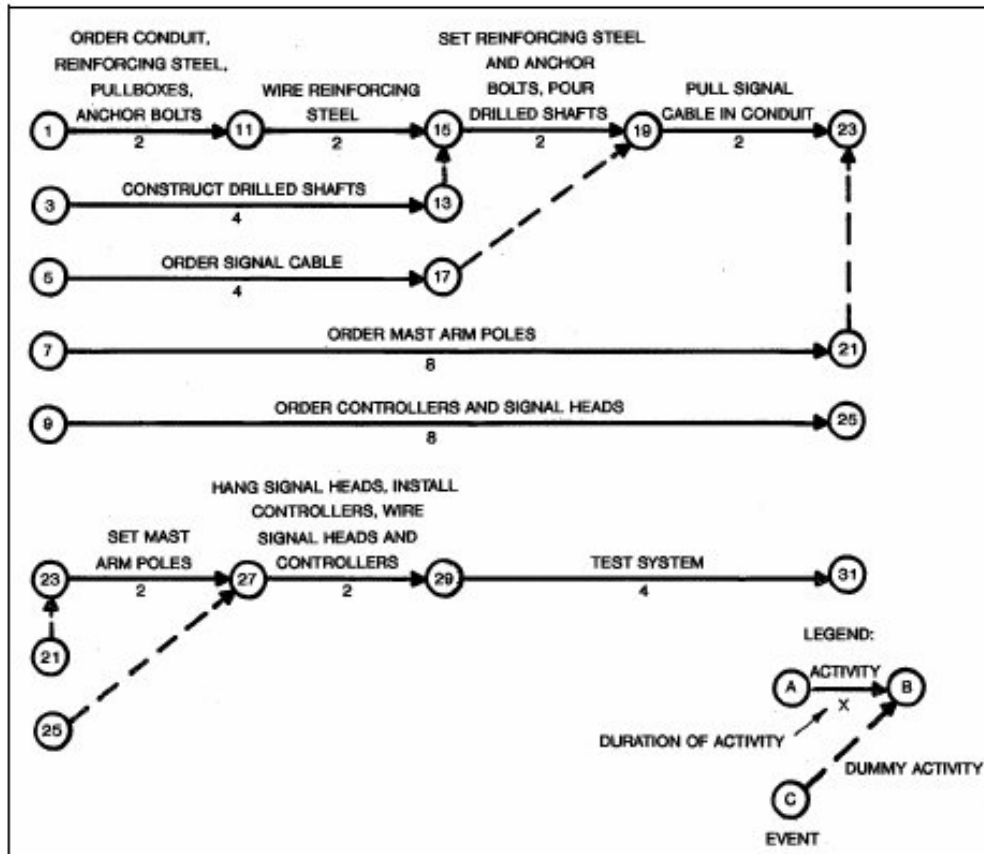
GANTT CHART

- Gantt charts lay out a project with time across and tasks down, completion can be tracked with bars showing % completed
- Can be done with simple or complex projects
- By computer/or with just paper
- Requires time and consistency

GANTT CHART



CPM





Project Management Skills

- Practice and learn PM skills
- Consider getting certified as a project manager (www.pmi.org)
- PMI offers a comprehensive certification program for practitioners with different levels of experience. There are currently five credentials available