

# PROJECT MANAGEMENT FOR SCIENTISTS

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## SCHEDULE & TIME MANAGEMENT

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# OUTLINE

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- Schedule Progress Measurements
- Earned Value Management
- Project Overload
- Time Management
- Procrastination
- 7 Habits
- Getting Things Done

# PROGRESS MEASUREMENTS

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- Track progress to make sure we are on schedule
- Key to finishing on time (and budget) is to start out that way and stay on track
- Best project managers find problems early and solve them without overtime
- Progress measurements identify problems early:
  - Problems are still small
  - Still time to catch up
- Progress measurements largely confined to schedule and budget

# MEASURING SCHEDULE PERFORMANCE

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- Each work package is a measurable unit of progress
- more work packages → more accurate schedule progress
- Difficult to assess what part of project is done
- 0-50-100 rule:
  - 0% complete: task has not begun
  - 50% complete: task has started, not finished
  - 100% complete: task is complete

# SCHEDULE PERFORMANCE ISSUES

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- Tasks really need to be all done do be completed
- Schedule performance measures accomplishment, not effort expended
- Do not focus on critical path alone; otherwise resource crisis towards end of project
- Number of tasks completed not good measure of progress: no differentiation between easy and difficult tasks
- Can use costs to measure schedule performance

# EARNED VALUE MANAGEMENT

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- Technique for measuring project performance, progress in objective manner
- Combines measurements of scope, schedule, and cost in single integrated system
- Provides accurate forecasts of project performance problems
- Objectively and quantitatively measures technical performance

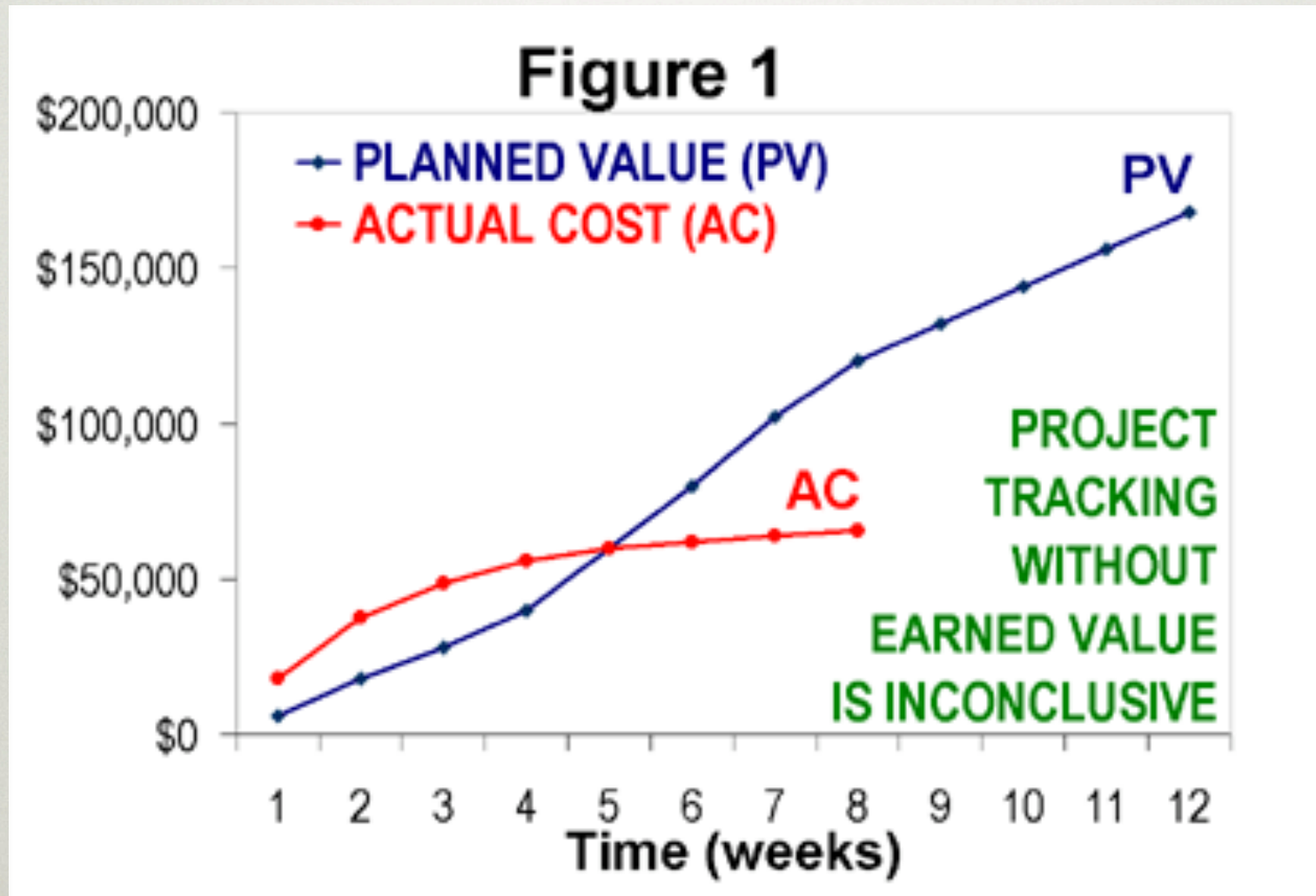
[based on en.wikipedia.org/wiki/Earned\\_value\\_management](http://en.wikipedia.org/wiki/Earned_value_management)

# EVM: DEFINITIONS

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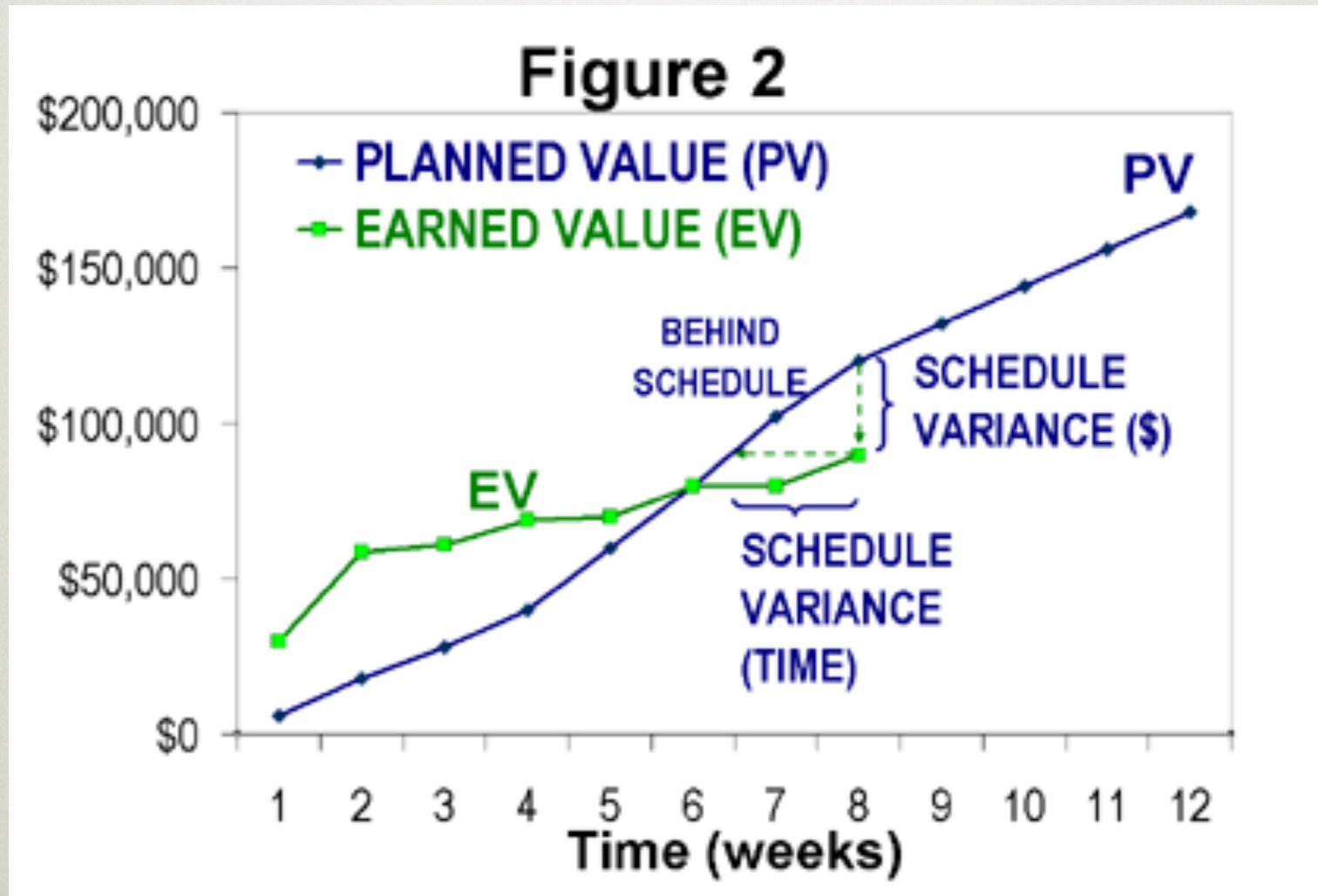
- Planned Value (PV): Total expected costs (cumulative budget) from start to current time according to baseline plan
- Actual Cost (AC): Total budget actually spent up to current time
- Earned Value (EV): Sum of planned value of every completed WBS element

# PLANNED & ACTUAL COST

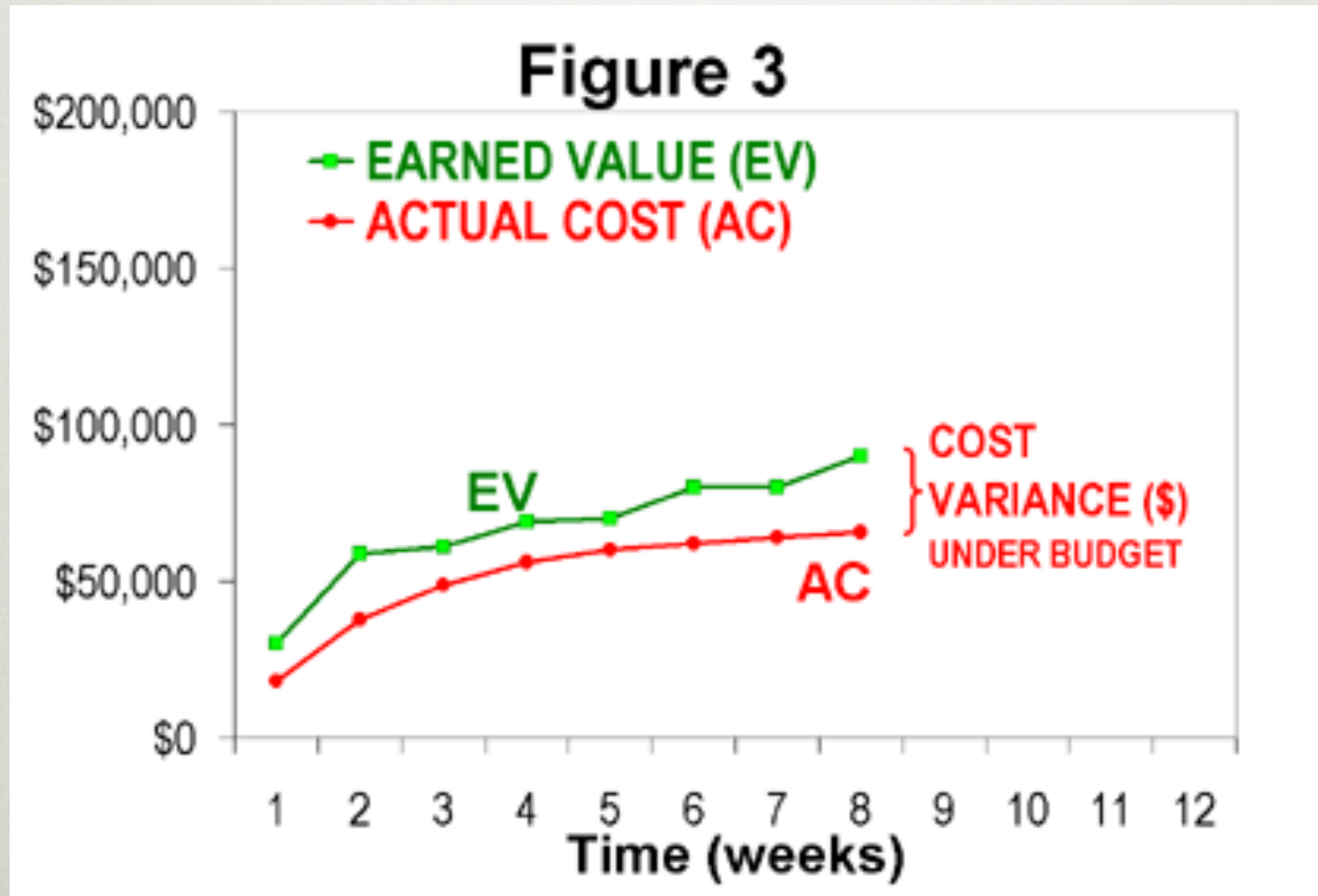




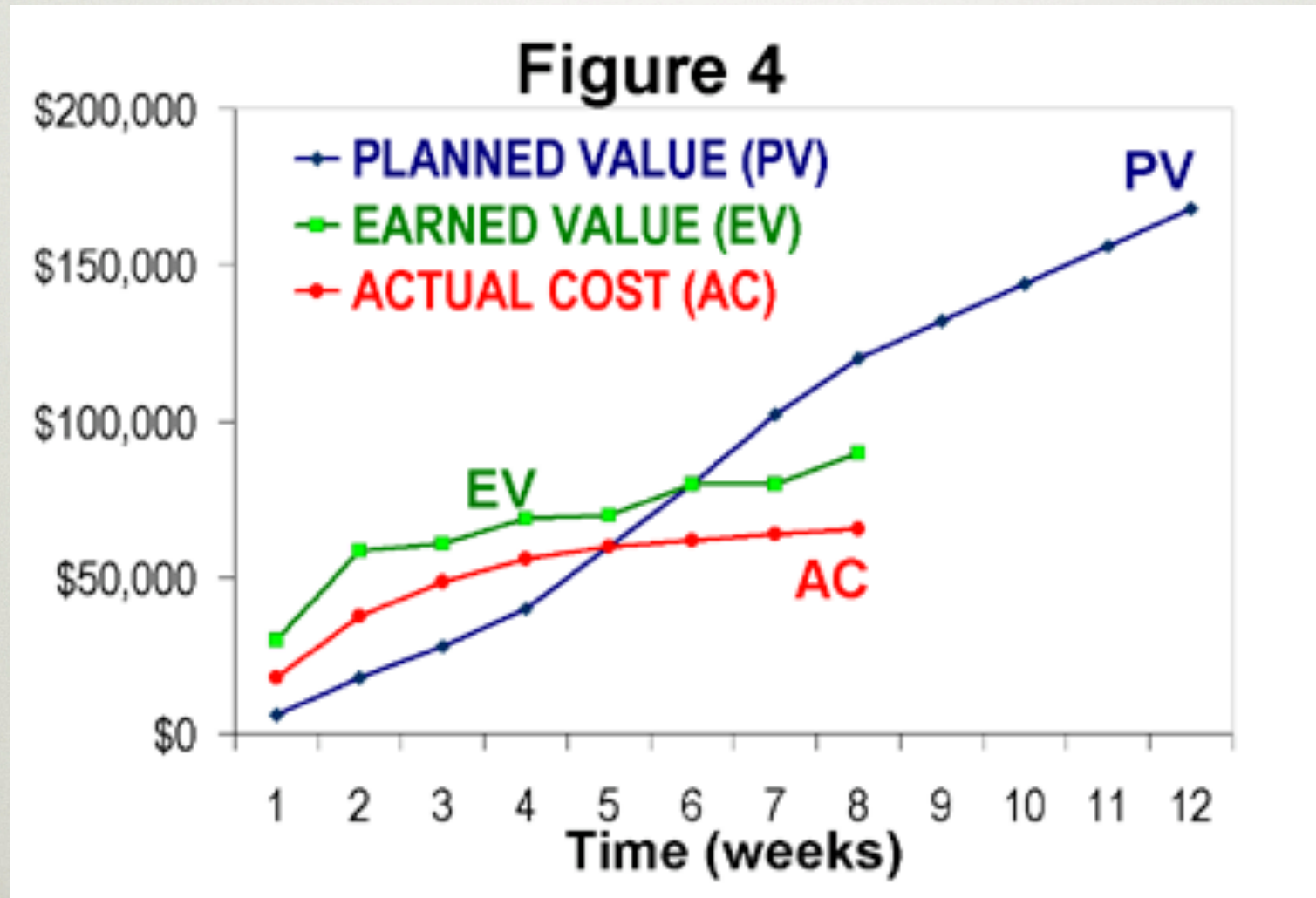
# PLANNED & EARNED VALUE



# EARNED VALUE & ACTUAL COST



# EARNED VALUE ANALYSIS



# EVM ISSUES

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- EVM does not measure project quality
- EVM difficult to apply to projects without quantitative or rapidly varying project plans
- EVM not suitable for operations management
- Collection of true and timely actual cost data can be the most difficult aspect of EVM

# WORK-LIFE BALANCE



# TIME MANAGEMENT



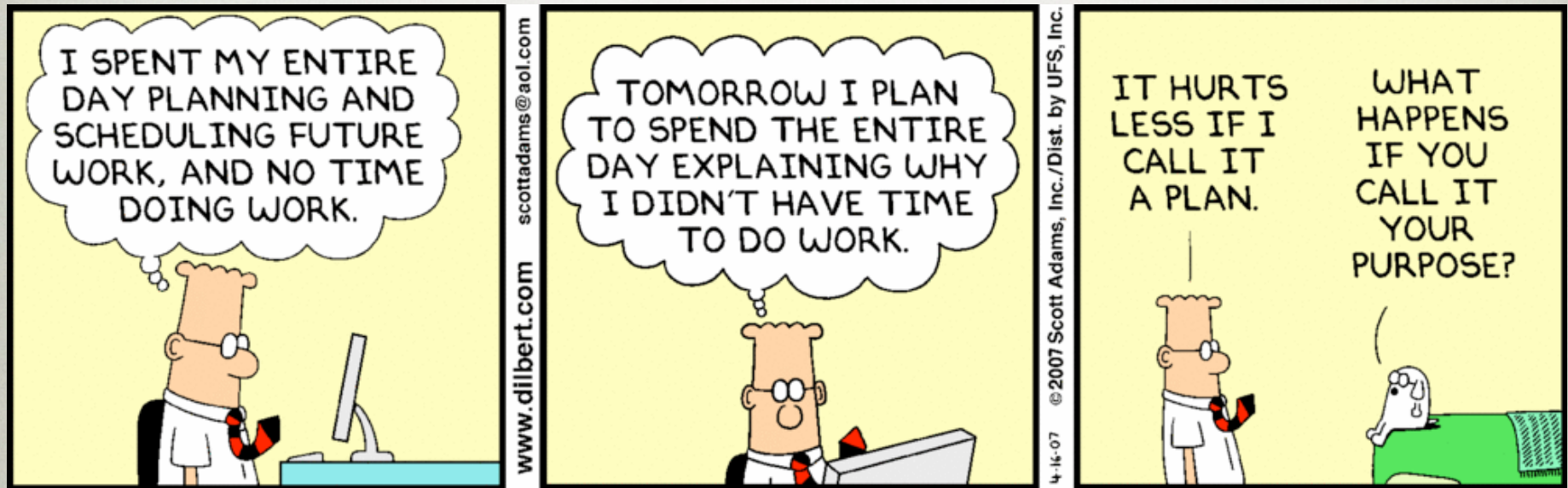
# PROJECT OVERLOAD

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**Giving structure to a problem is half the solution.**

1. List all projects
2. Identify next step for each project
3. Find the quick hits
4. Prioritize the remaining steps
5. Schedule your time weekly, display workload

# HOW NOT TO DO IT!





# 1. LIST ALL PROJECTS

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- Identify current workload
- Worksheet for each project (high-level view):
  - Project name
  - My role
  - Priority
  - Project phase: Initiate, Plan, Control, Close
- At most 5 projects
- 80-20 rule: 20% of projects take 80% of time
- Display all these projects together

## 2. IDENTIFY NEXT STEPS

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- Use (high-level) WBS for each project
- Identify next step in each project
- Only looking at next steps can reduce overload to manageable amount of work
- Work that has not been started yet can be imagined as huge workload
- By organizing and seeing what is next, tasks become visible in their real size and challenge

# 3. FIND THE QUICK HITS

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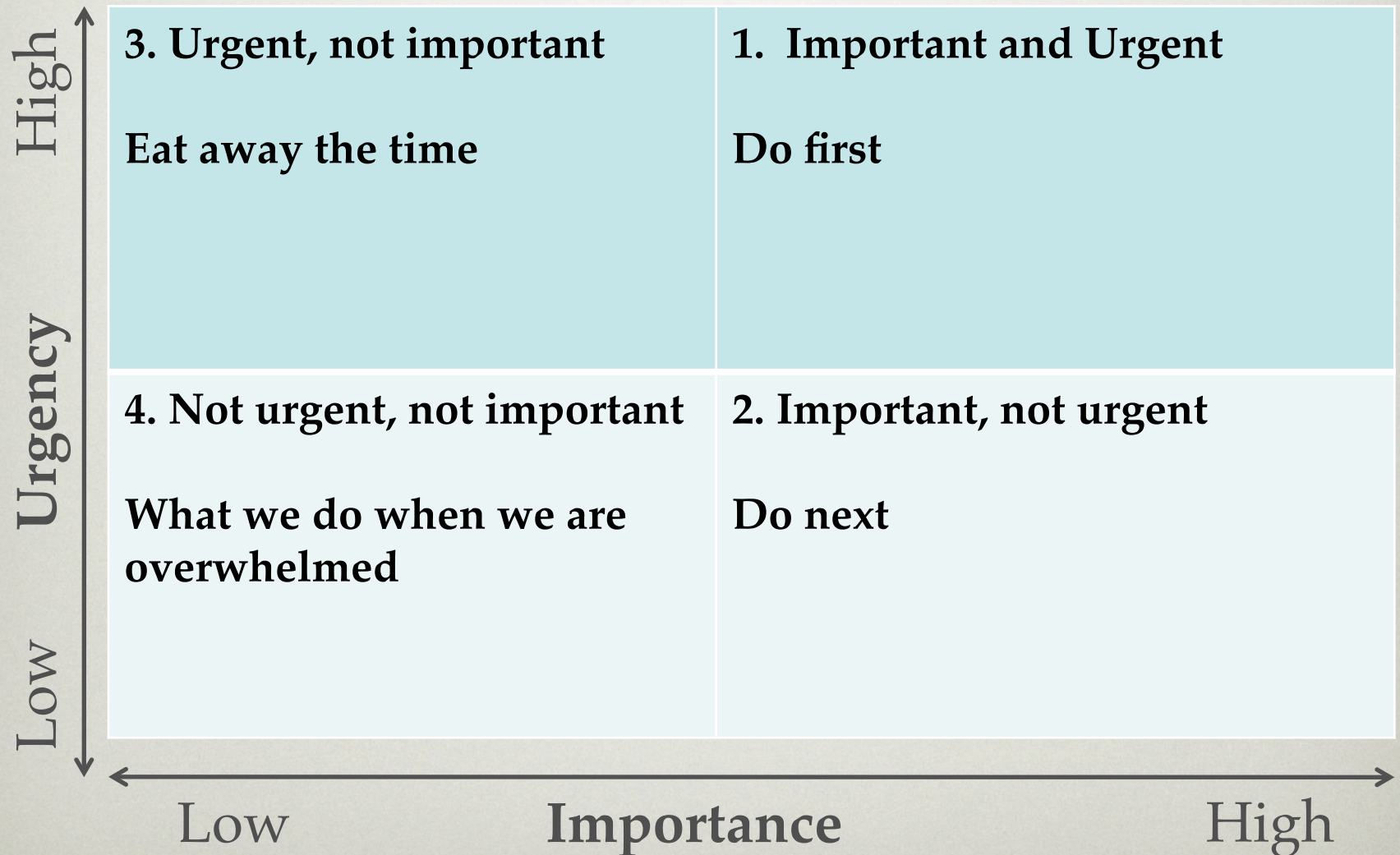
- Identify steps that result in most immediate gain
- What are the 20% of (next) tasks give an immediate, substantial boost in gaining control of overload?
- Top of the list if yes to the following questions:
  1. Will small investment of time keep project moving?
  2. Is project near closure?
  3. Stalled because decision or clarity is needed?

# 4. PRIORITIZE REMAINING STEPS

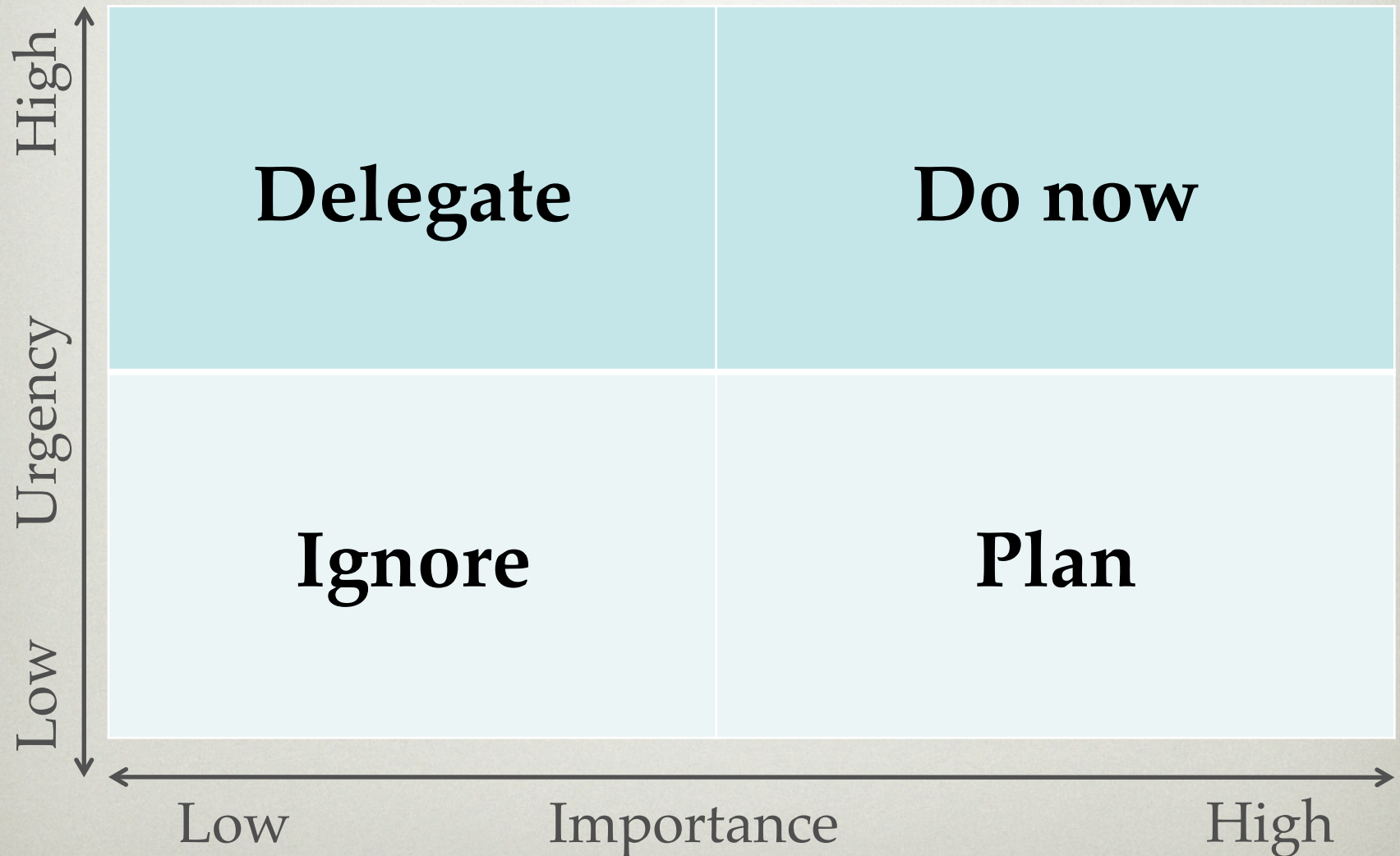
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- After taking care of quick hits (lots of improvement)
- Any steps that can be eliminated, put on back burner?
- Any steps that are urgent and important?

# URGENCY – IMPORTANCE MATRIX



# URGENCY – IMPORTANCE MATRIX



# 5. SCHEDULE TIME WEEKLY

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- Put all steps in prioritized order
- Display workload to have rational discussions about overload
- Schedule work
- Add contingency time to catch up from unexpected problems
- Add non-project work to calendar

# PROCRASTINATION





# PROCRASTINATION

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- Delaying tasks that should be done now (instead doing something more enjoyable or more comfortable to do)
  - Work on the “wrong” thing
1. Recognize behavior (procrastination)
  2. Understand reasons behind behavior
  3. Better manage time and outcomes

# REASONS FOR PROCRASTINATING

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- Do not understand difference between urgent tasks and important tasks
- Give highest priority to urgent tasks that are not important
- Be driven by person with loudest demands
- Overwhelmed by task
- Doubt having necessary skills or resources
- Waiting for the “right” mood or time
- Fear of failure or success
- Poor decision making or organizational skills
- Perfectionism

# RECOGNIZE BEHAVIOR

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- Indicators of efficiency:
  - Knowing task priorities
  - Delaying unimportant task is good prioritization
  - Working from prioritized To Do list
- Indicators of procrastination:
  - Spending most time on low priority tasks
  - Reading something more than once without taking action or scheduling work
  - Interrupting high-priority task for coffee, checking e-mails
  - Leaving import task for long time on To Do list
  - Regularly agreeing to do and doing unimportant tasks instead of getting important tasks done

# FIND REASON BEHIND BEHAVIOR

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- Depends on person and task
- Understand reasons for procrastination for each situation → choose best approach for overcoming reluctance to do it
- Procrastination mostly due to two main reasons:
  - Task is unpleasant
  - Task is overwhelming

# OVERCOMING PROCRASTINATION

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- Unpleasant task → motivation:
  - Make up your own rewards
  - Encourage others to check up on you
  - Identify unpleasant consequences of NOT doing task
  - Determine cost of time to employer for not delivering value for money
- Overwhelming task:
  - Break project into smaller, more manageable tasks
  - Start with quick, small tasks, even if they are not logical first actions

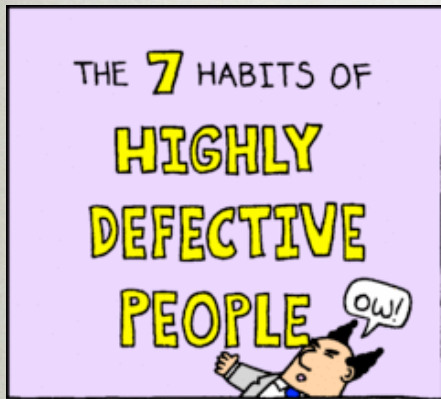
# 7 HABITS (COVEY 1989)

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## The Seven Habits of Highly Effective People

1. Be proactive, take responsibility for every aspect of your life
2. Develop long-term goals, visions
3. Prioritize work aimed at short-term goals, at the expense of tasks that are very important
4. Seek mutually beneficial solutions
5. Give advice only after having empathetically understood a person and their situation
6. Team work: effective problem solving, collaborative decision making, valuing differences, building on divergent strengths, leveraging creative collaboration, embrace and leverage innovation: synergy as a habit
7. Engage in recreational activities, sharpen the mind

# ANOTHER 7 HABITS



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# GTD (ALLEN 2001)

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## Getting Things Done (Allen 2001):

- “Get everything out of your head.”
- “Make decisions about actions required on stuff when it shows up — not when it blows up.”
- “Organize reminders of your projects and the next actions on them in appropriate categories.”
- “Keep your system current, complete, and reviewed sufficiently to trust your intuitive choices about what you're doing (and not doing) at any time.”



# GETTING THINGS DONE (CONT.)

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Instead of priorities, focus on control and perspective

## Workflow:

1. Collect all tasks to be done
2. Process tasks (trash, delegate, do now, do later)
3. Organize into categories and lists
4. Review regularly
5. Work on tasks

# GETTING THINGS DONE (CONT.)

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## Natural planning:

1. Defining the purpose and principles
2. Envisioning the outcome
3. Brainstorming
4. Organizing
5. Identifying next actions

# GETTING THINGS DONE (CONT.)

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## Levels of focus:

1. Current actions
2. Current projects
3. Areas of responsibility
4. Yearly goals
5. 5-year vision
6. Life goals

# NOT GETTING THINGS DONE

