Project Management

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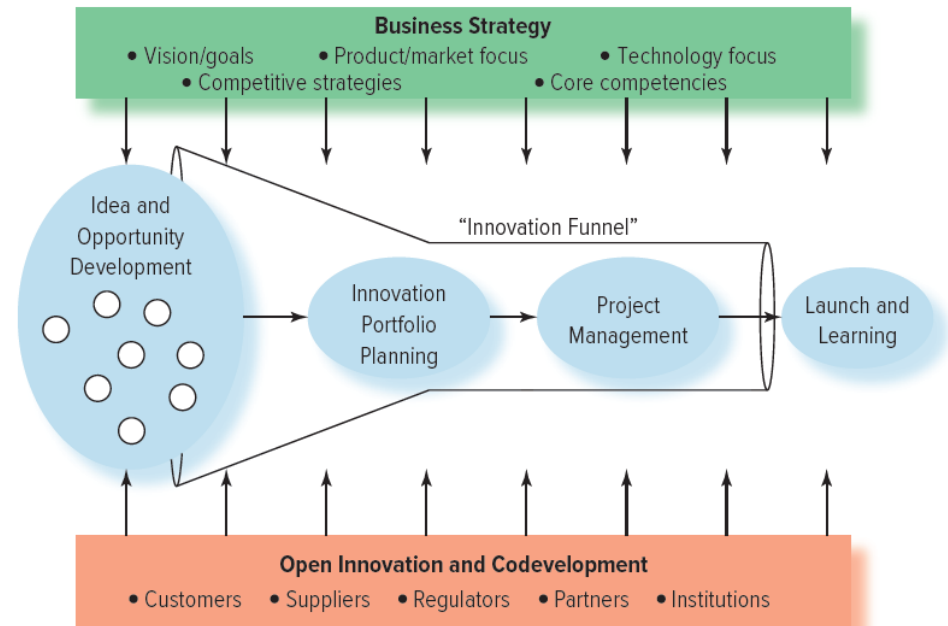
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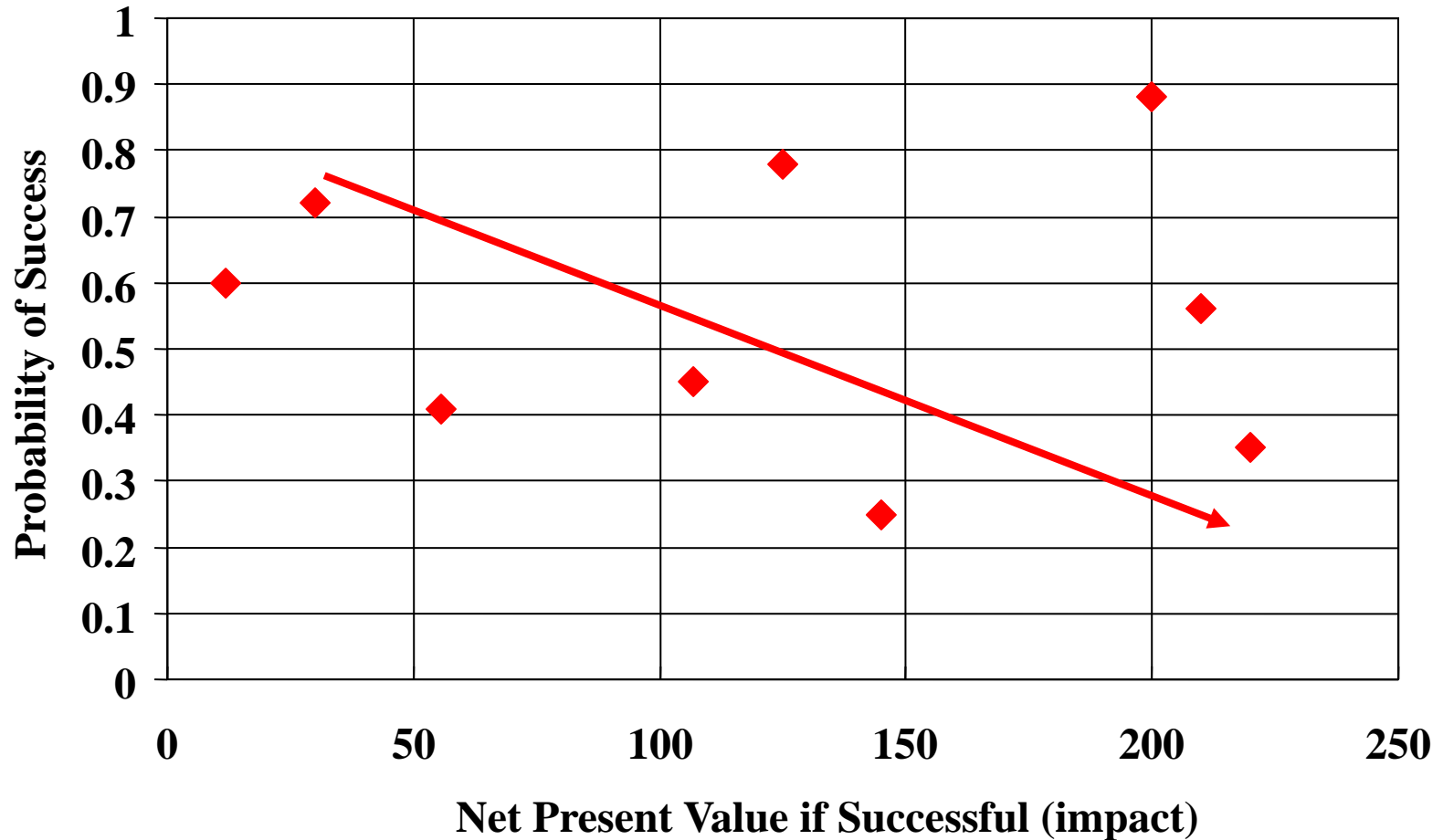SCHOOL OF BUSINESS

Overview

- Projects portfolio - purposes and selection
- Project management
  - Defining/Organizing
  - Planning
  - Executing
  - Completing
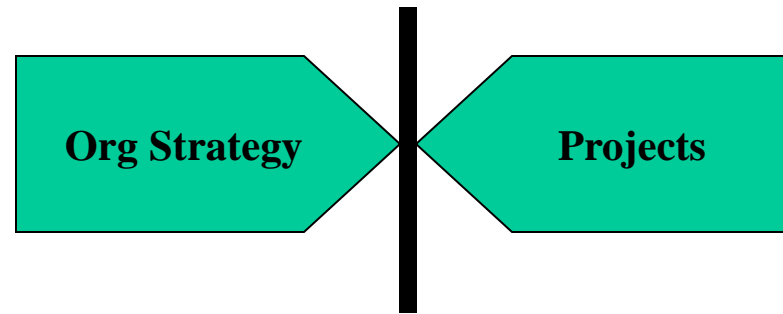
Managing a Portfolio of Projects

Portfolio Value = Σ P_i(Success) X NPV_i

Projects should be vehicles for executing strategy

Org Strategy | **Projects**

Project portfolio should be mirror image of strategy

Reality in most organizations:

- Project mix does not fit strategic imperatives
- Selection process
  - Ad hoc, reactive, and political
  - Little explicit link to strategy
  - Senior leaders select only from proposed projects
  - Focus on on derivative projects at expense of longer-term capability-building projects
  - Doesn't face reality of capacity constraints
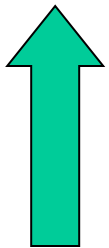
Bottom-up

Project Selection Matrix

Organizational Objectives (criteria and weights should align with strategic priorities)

	Within competencies	Strategic fit	Technical risk (avoidance)	Sales/Share growth	Option value (new opportunities)	Customer impact/loyalty	ROI (if successful)	Weighted total
Weight	2.0	3.0	2.0	2.5	1.0	1.0	3.0	
Proj 1	1	8	2	6	0	6	5	66
Proj 2	3	3	2	0	0	5	1	27
Proj 3	9	5	2	0	2	2	5	56
Proj 4	3	0	10	0	0	6	0	32
Proj 5	1	10	5	10	0	8	9	102
Proj 6	6	5	0	2	0	2	7	55
….								
Proj n	5	5	7	0	10	10	8	83

Strategic project portfolio planning

1. Clarify strategic goals and objectives

   - Products, market segments, positioning

   - Target capabilities

   - Amount of spend budget

2. Classify project types

3. Create aggregate plan

   - % spend across project types

   - Max number of projects given requirements and capacity

4. Commit to specific projects

   - Compare projects *within* each class

   - Different criteria for each class
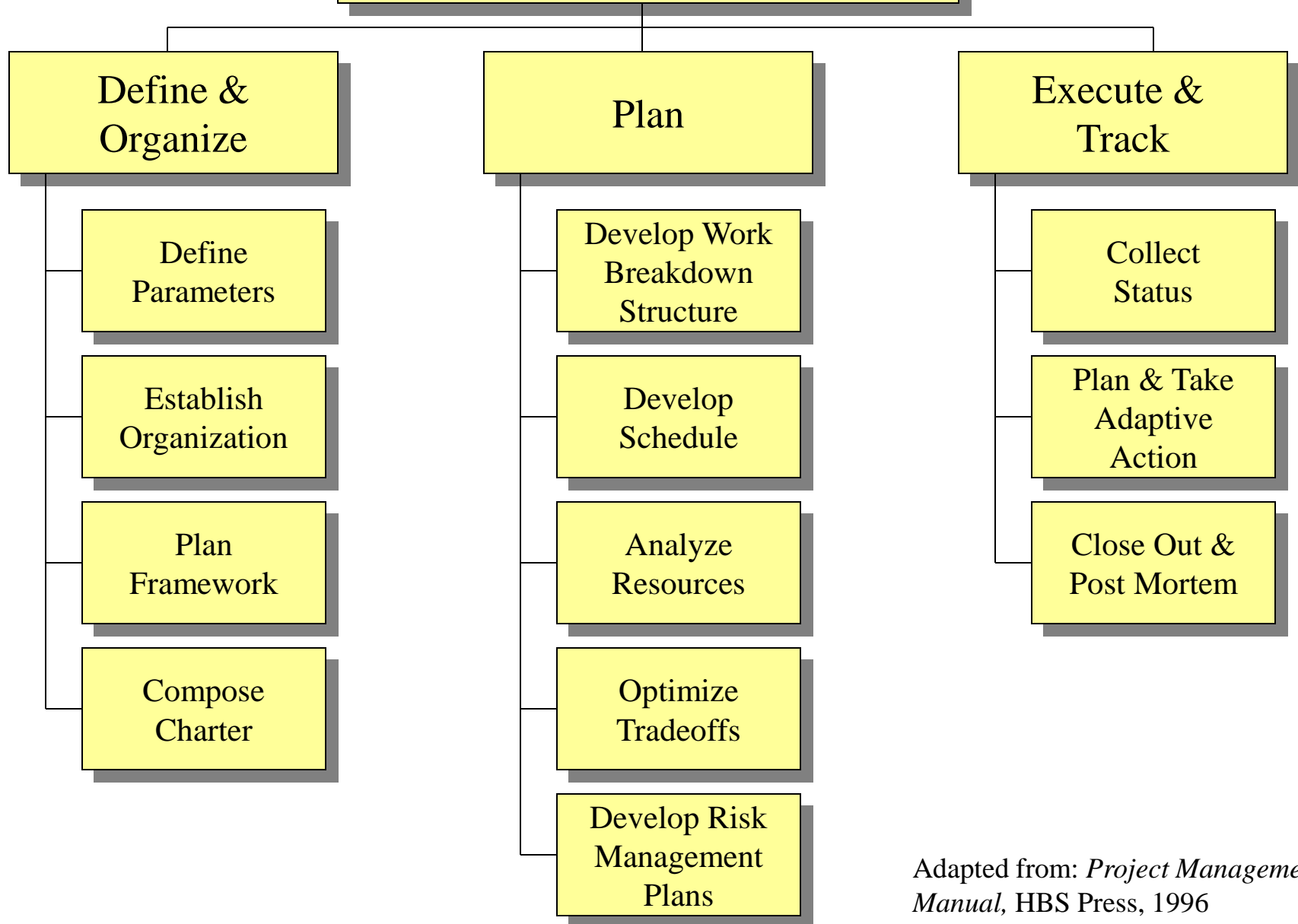
   - Senior leaders shape menu of choices

Aggregate project planning

- Adds *discipline* in project selection and creation

- Helps *define the scope* of what any individual project must achieve in terms of business objectives

- Focuses attention on long term expansion of critical technical and organizational *capabilities*

Project Management

Define & Organize
- Define Parameters
- Establish Organization
- Plan Framework
- Compose Charter

Plan
- Develop Work Breakdown Structure
- Develop Schedule
- Analyze Resources
- Optimize Tradeoffs
- Develop Risk Management Plans

Execute & Track
- Collect Status
- Plan & Take Adaptive Action
- Close Out & Post Mortem

Adapted from: *Project Management Manual,* HBS Press, 1996

Project Life Cycle

Define/Org	Plan	Execute/Track	Complete
Goals	Schedules	Status reports	Train customer
Specifications	Budgets	Changes	Transfer documents
Tasks	Resources	Quality	Release resources
Responsibilities	Risks	Forecasts	Reassign staff
Teams	Staffing		Lessons learned
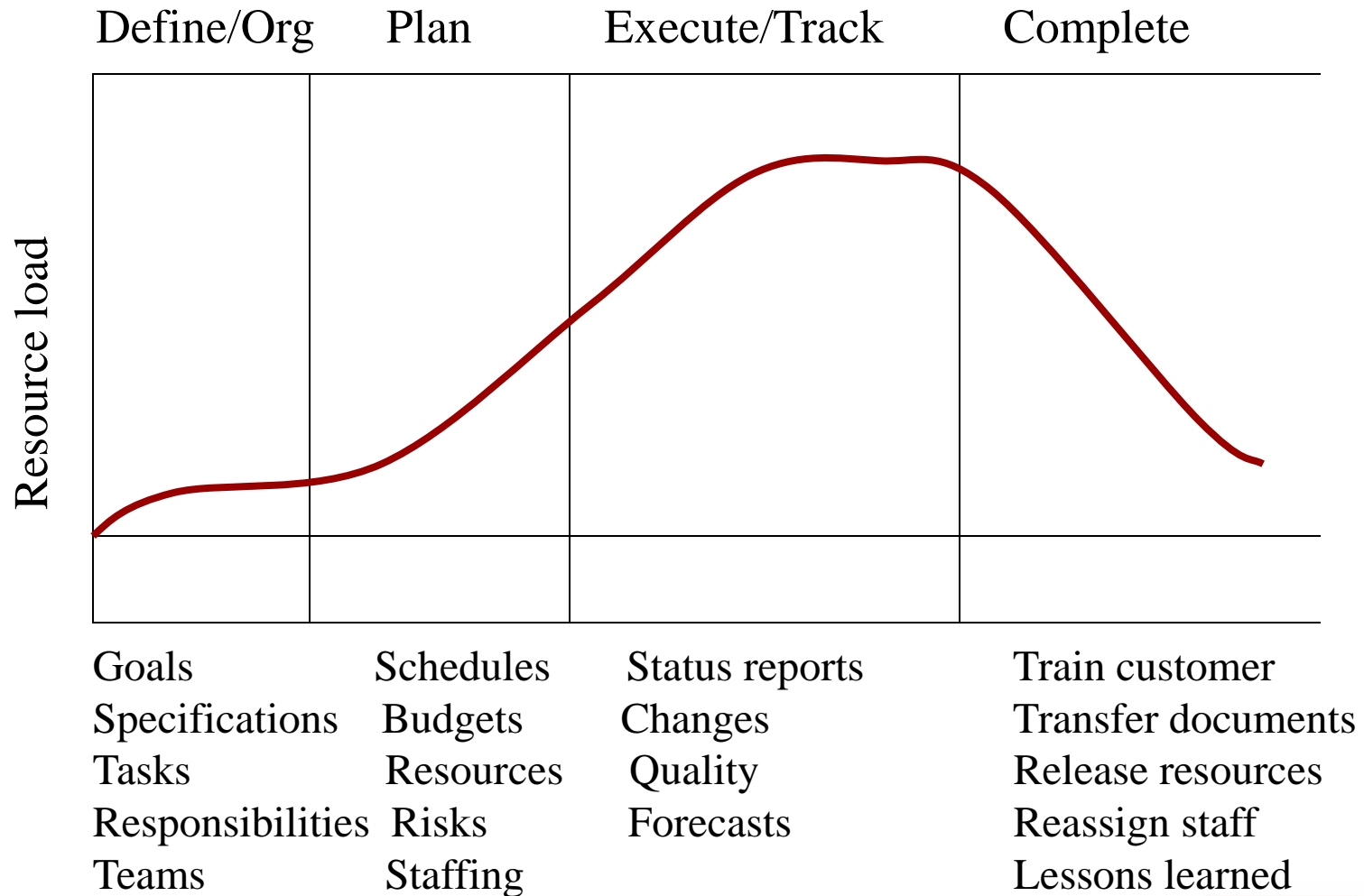
Faster, Better, Cheaper

In a study of 137 NPD projects*, the following factors separated *efficient* projects from *non-efficient* ones:

- Experience
- Top management support
- Explicit goals
- Collaboration, especially design – mfg
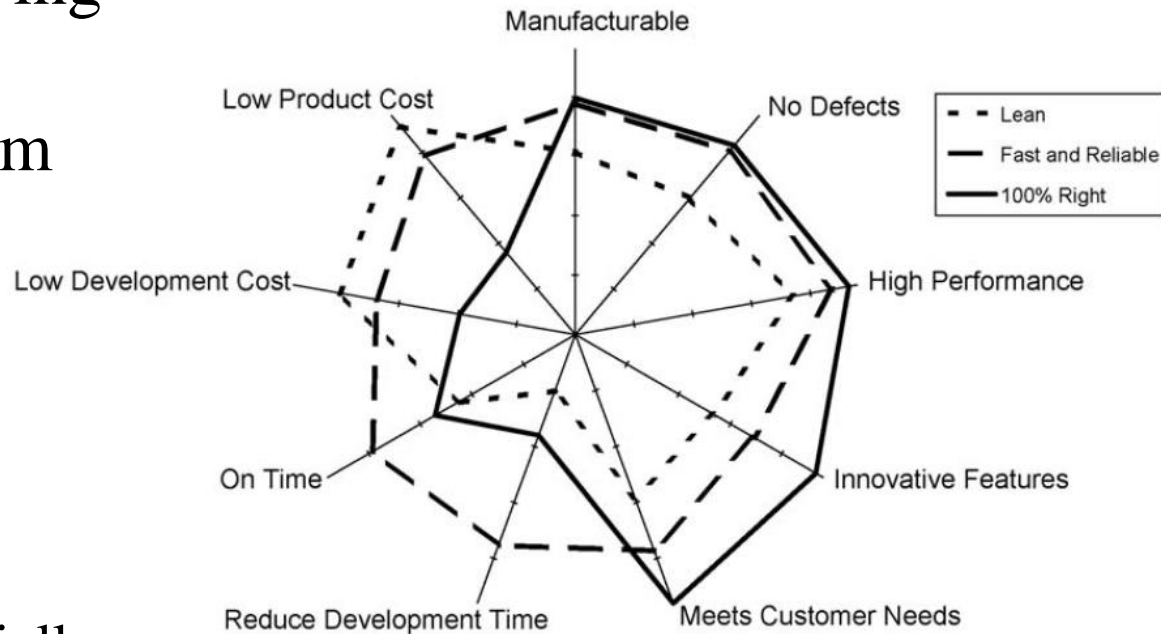- Concurrent process

Fig. 3. Tier 1 efficient sub-groups.

*Swink, et al. Faster, better, cheaper.. JOM, 2006

Project Manager Profile

|	Lightweight (limited)	Heavyweight (extensive)
Span of coordination responsibilities	├———————————————————————————————————————┤	
Duration of responsibilities	├———————————————————————————————————————┤	
Responsible for key decisions	├———————————————————————————————————————┤	
Working contact with key resources	├———————————————————————————————————————┤	
Direct contact with customers	├———————————————————————————————————————┤	
Multidiscipline skills	├———————————————————————————————————————┤	
Skill in conflict resolution	├———————————————————————————————————————┤	
Concept champion	├———————————————————————————————————————┤	
Influence in key functions:		
Engineering	├———————————————————————————————————————┤	
Marketing	├———————————————————————————————————————┤	
Manufacturing	├———————————————————————————————————————┤	
.	├———————————————————————————————————————┤	
.	├———————————————————————————————————————┤	
Other	├———————————————————————————————————————┤	

Currencies of Influence

- Leadership motivates behavior

  – Task-related currencies (expert)

  – Position-related currencies (boss)

  – Inspiration-related currencies (visionary)

  – Relationship-related currencies (friend)

  – Personal-related currencies (mentor)

- Milestones also motivate behavior

Composing the Project "Charter"

- Project objective statement
- Project priority
- Major deliverables
- Target dates
- Project team roster
- Major risks
- Key framework processes
- Attach: *Is/Is Not* analyses
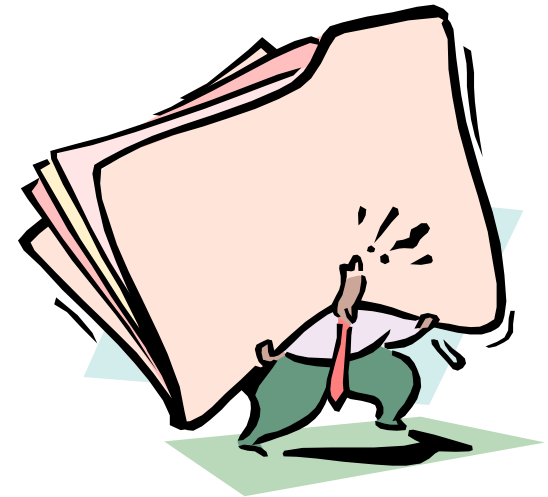
Establishing Precedence and Timing: Gantt Chart

Task	Start	Complete	Responsible
Finalize survey and cover letter	8/1/2016	8/15/2016	Swink
Finalize respondent contact list (add NRA and other sources)	8/1/2016	8/15/2016	Harris
Introduction email from Rob Dugas	8/15/2016	8/16/2016	Dugas
First invitation (survey opens)	8/19/2016	8/26/2016	Swink
Second invitation	8/26/2016	9/2/2016	Harris
Final invitation (survey closes)	9/2/2016	9/12/2016	Harris
Analysis	9/12/2016	10/3/2016	Swink
Review and revise findings	9/21/2016	10/14/2016	Swink
Prep report	10/14/2016	10/21/2016	Swink
Conference	10/25/2016	10/26/2016	Swink/Dugas
Prep and send personalized reports to participants who ask	10/26/2016	11/26/2016	Swink

NRA Survey Project
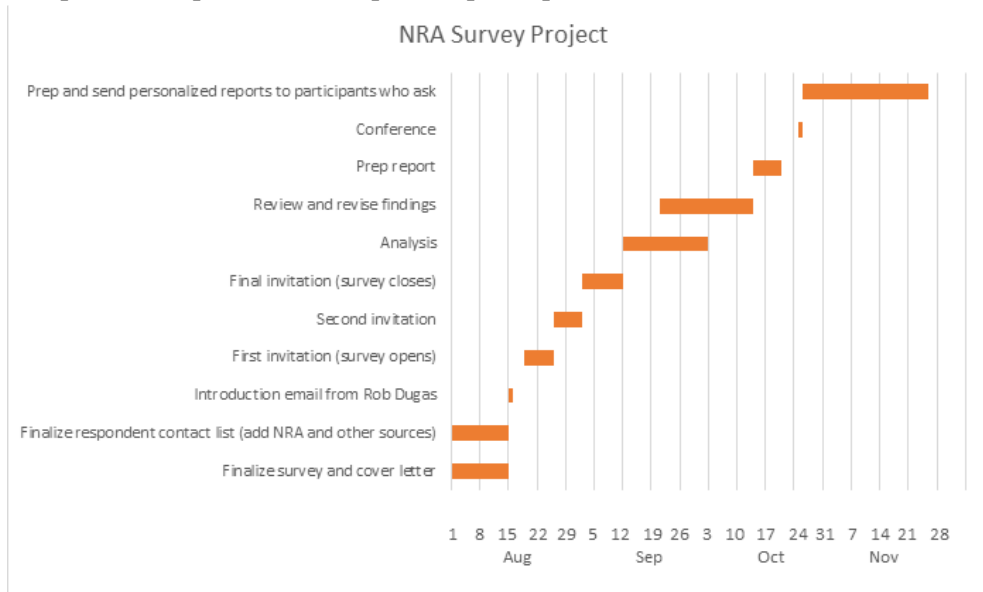
Realities of Time Estimation

- Aggressively scheduled projects finish late. Why?
  - Over-optimistic estimates (treating unknowns as knowns)
  - Work owners tell the PM what he/she wants to hear
  - Neglect to factor in multi-tasking which adds time
- Other times, managers pad their estimates, and projects still finish late. Why?
  - Work fills the time available
  - Disincentives to finishing early
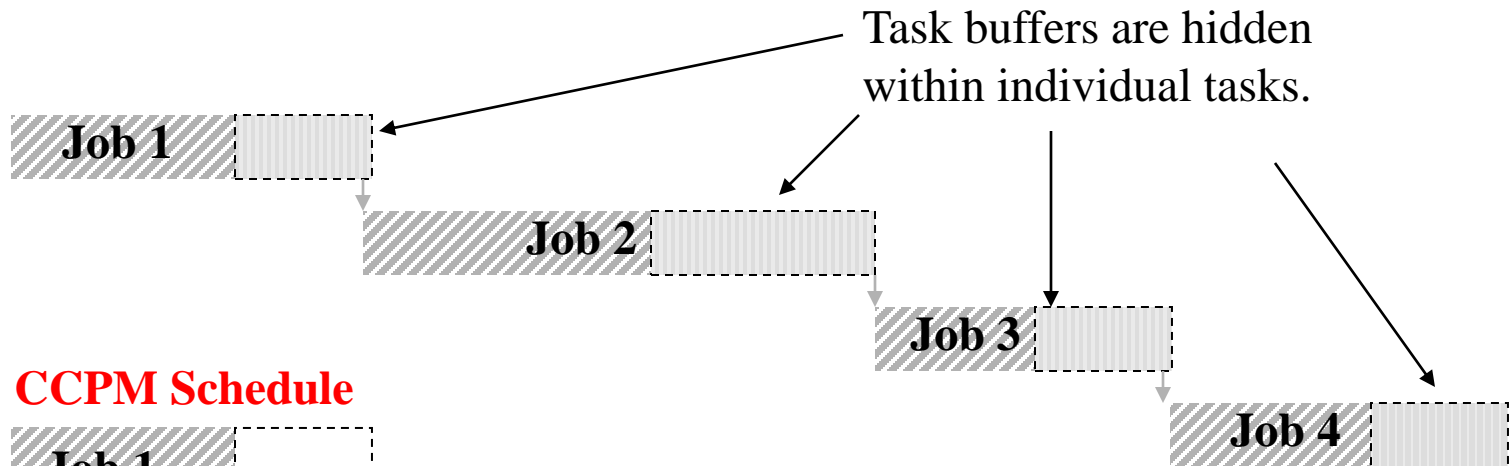 - Early finish doesn't lead to early start for following activity

Critical Chain Approach

- Encourage "true" 50/50 expected time estimates

- Add time buffers at key points / activities
  - High uncertainty tasks
  - Where non-critical tasks merge with critical path
  - Where scarce resources are needed

- Manage the buffer closely
  - Make it visible
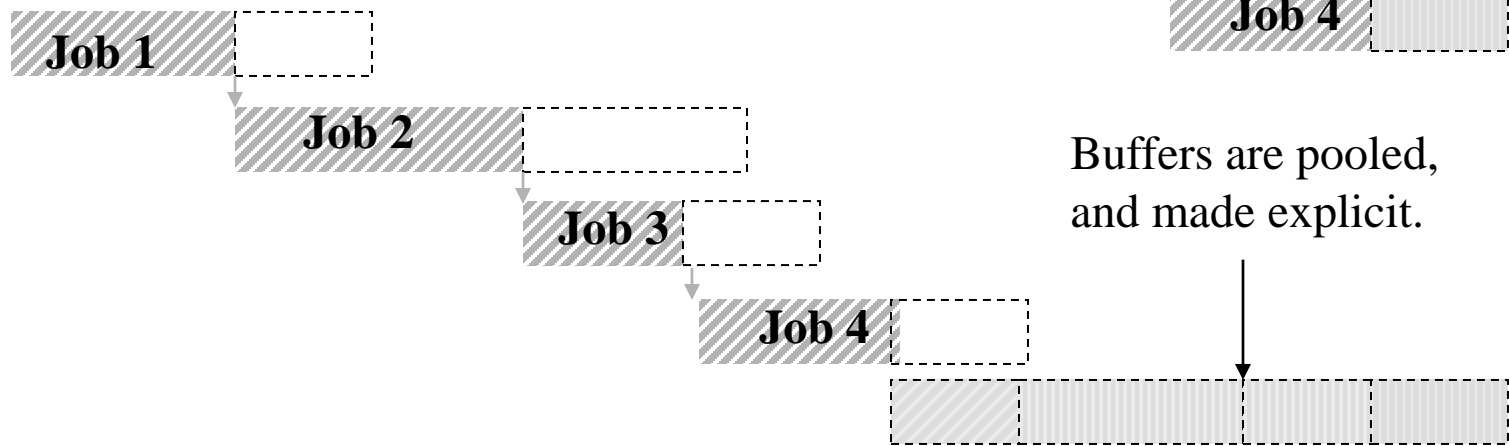 - Add/Subtract based on actual completions

Critical Chain vs. Conventional Approach

Conventional Project Schedule

Task buffers are hidden within individual tasks.

Job 1

Job 2

Job 3

CCPM Schedule

Job 1

Job 4

Job 2

Buffers are pooled, and made explicit.

Job 3

Job 4

Teamwork

- Decide how the team engages together interpersonally to get things done

- Manage Team Challenges
  - Not enough access to each other (time, different office locations, varying schedules)
  - Varying levels of interest in the topic
  - Worked independently so not a cohesive product
  - Personality differences
  - Not effective leadership

Team Management – "PARIS" Responsibility Matrix

Sample Project: Writing a Travel Guide

Project Team Members

Project Tasks	Craig	Victor	Diane	Betty	Carol	Jerry
Research	P	I	A			S
Travel Arrangements	I	A		P		S
Writing	R	I	P	A	R	S
Photography	A	P	I	I	S	R
Editing			R	I		S
Marketing					S, P	A

P=Participant	R=Review Required	S=Signoff Required
A=Accountable	I=Input Required	

Planning for "Dynamic/Uncertain" Projects

Managing
Uncertainty

Adapting to
Uncertainty

- Extend "sensing" capabilities through
    - Key customer collaboration
    - Supplier/Resource provider collaboration
    - Competitor intelligence
    - Sponsor and regulator engagement
- Adaptive/interactive planning
    - High level planning only
    - "Plan" to evaluate and adjust regularly
- Deliver value early and often
    - Smaller increments
    - Explore/fail fast with efficient loops
    - Capture and share *emergent learning* (e.g., colocation)
- Get flexible
    - Variable cost structure (outsource, temps, leasing)
    - Avoid / postpone commitments
    - Cross train employees / general purpose resources
    - Modular project structure (e.g., stage-gate)
- Emergency (crash) funds

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Executing and Tracking Projects

Completing the Project

- Opportunity to capture learning
  - Effective/ineffective processes
  - Improvement ideas/follow-on projects
- Acknowledge people's contributions
  - Rewards
  - Celebration
- Complete paperwork and archive
- Integrate people back into the organization