Getting Started with Personal Project Planning

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1

Our society runs on commitments!

2

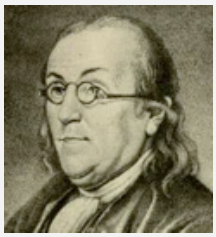
Our Society Runs On Commitment Status

Businesses make decisions based on *reported* and *perceived* project status

Inaccurate status leads to:

- » Incorrect decisions
- » Delayed decisions

"A stitch in time saves nine."



Mismatched Expectations, Miscommunication

Expectations come from all directions:

- » Business People
- » Technical People
- » Customers
- » Partners
- » Suppliers
- » Users

What is a Project Plan?

What is a plan?

» A solution embedded in a list of tasks for the work that needs to be done in order to achieve the desired outcome.

What are the parts of a project plan?

» Task List with Estimates
» Schedule
» Assumptions
» Dependencies

5

With Gratitude to Watts S. Humphrey (1927-2010)

"Father of Software Quality"

"Watts brought engineering to software engineering."

Authored many books & papers:

» Managing the Software Process
» Personal Software Process
» ... & others, see link for more
http://www.sei.cmu.edu/watts/

6

Acknowledgments

"If I have seen a little further it is by standing on the shoulders of Giants."
- Sir Isaac Newton

- Franklin-Covey Time Management Seminar
- Object-Oriented Analysis by Coad & Yourdon
- Code Complete by Steve McConnell
- Applying UML and Patterns by Craig Larman
- Getting Things Done by David Allen
- ... and many others

7

Why Personal Project Planning?

8

Knowledge Work Is Personal

All commitments ultimately will have to be delivered by somebody doing some work.

9

How To Do Personal Project Planning?

10

Agenda

A word of caution

1. Parameters for planning
2. Key concepts
3. Planning mechanics

A Word of Caution

Please Keep in Mind...

The *only* source of agility is knowledge.

Process is not a *creator* of momentum, only an accelerator of momentum.

Parameters for Planning

Parameters for Planning

1. Complexity: Do you understand the work?
2. Structure: What is the composition of the work?
3. Strategy: In what order will you do the work?
4. Dependencies: Who's input do you need and who needs your input to do the work?
5. Tasks and Task Duration Estimates: What do you need to do and how long will it take?
6. Schedule Estimates: How much time do you have to do this work?

StevenTeleki Getting Started with Personal Project Planning
Home | Why? | Parameters | Key Concepts | Mechanics | Conclusion

Complexity

Do you understand the work?

» If you can't plan it, you probably don't understand it well enough.

Separate the known from the unknown.

» Define an experiment to reduce or eliminate the unknown.

11 August 2011

Structure

What is the composition of the work?

Can you see how the software might be structured?

- What *subsystems*, *modules*, and *components* will the solution require?
- You need not see the "final" solution, but you should have at least *one* way of doing it.

Strategy

In what order will you do the work?

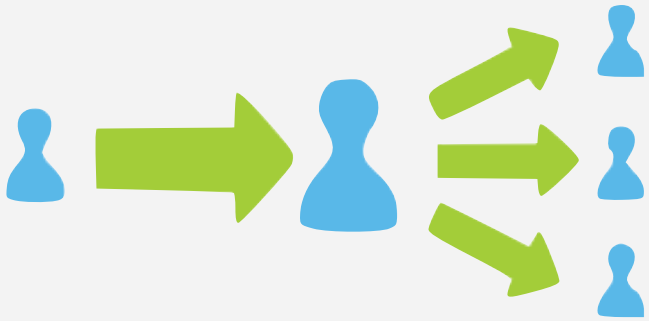
Structure and strategy are tied together.

Common strategy:
incremental buildout

Dependencies

What are my **inputs**, who provides them?

What are my **outputs** and who needs them?



Tasks and Task Duration Estimates

What do you need to do and how long will it take?

Properties of a good task:

- » Unambiguous name
- » Has duration estimate

Personal task list has no complicated task dependencies; you do them **in order**.

Schedule Estimate

How much time do you have for the work?

Estimate the hours that you will work on this project.

» Make this real.

Key Concepts

Key Concepts

1. Composition: Build the product "brick-by-brick"
2. Plan each task assuming the prior work is already done
3. Have an engineering notebook
4. Approach planning like you approached 5th grade math problems

Composition

Build the product "brick-by-brick," from a set of cooperating components.

Ensure that each component is high-quality before inclusion into the product.

Plan Each Task Assuming The Prior Work is Done

Let's suppose that your plan is:

- » Task A
- » Task B

When considering what "Task B" is, assume that "Task A" is complete, and you have the actual output of that task.

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Home | Why? | Parameters | Key Concepts | Mechanics | Conclusion

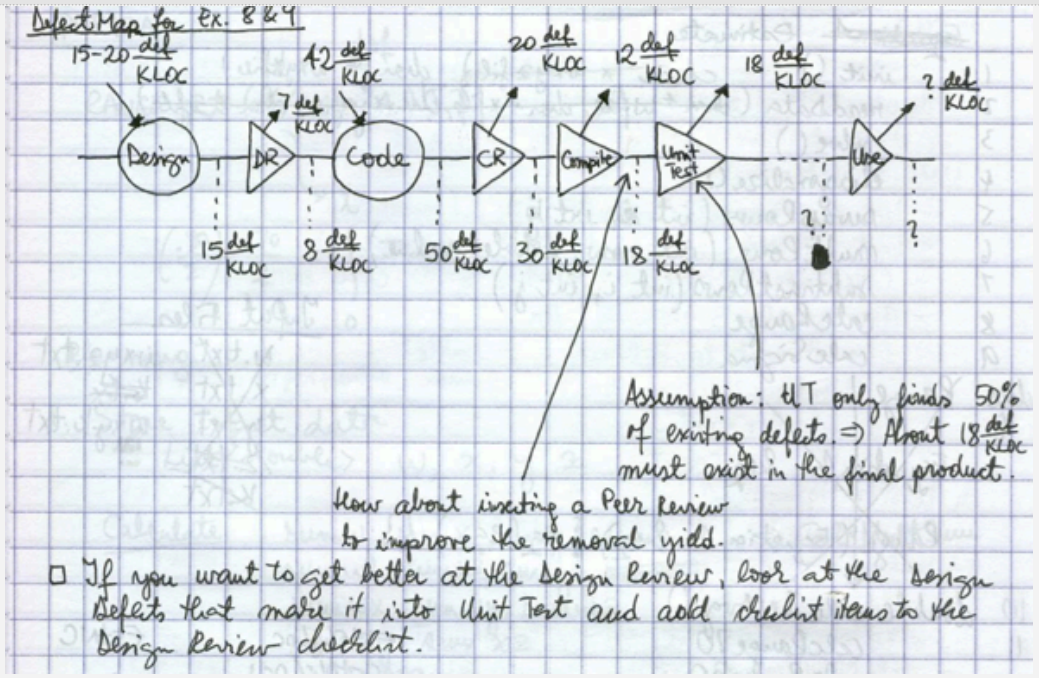
Have an Engineering Notebook

Use it to document you thoughts and ideas.

Record observations and data.

Use it as a reference when planning new work.

Sample: Engineering Notebook



27

Approach Planning Like 5th Grade Math Problems

All planning problems are alike.

You have planned one, you've planned all.

28

Planning Mechanics

Planning Mechanics

1. Draw a Conceptual Design
2. Decompose the problem into parts
3. Write tasks
4. Estimate tasks
5. Plan for quality work
6. Establish a schedule
7. Document assumptions
8. Account for dependencies
9. Review and replan often

Draw a Conceptual Design

"Back of the napkin" version of the system.

» Start with a draft domain model from the user's point of view

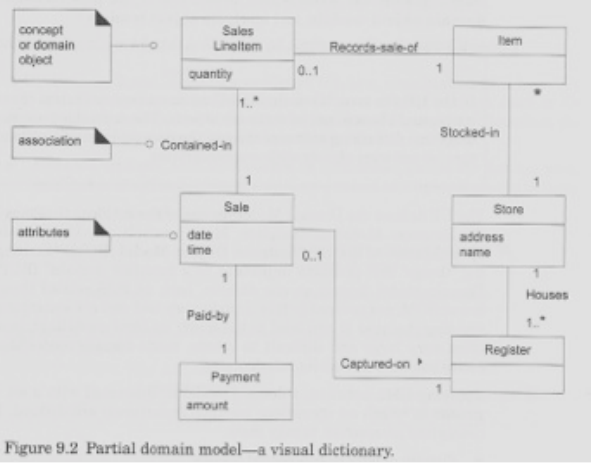


Figure 9.2 Partial domain model—a visual dictionary.

Larman, Craig. Applying UML and Patterns, 3rd Ed. Prentice Hall PTR. Upper Saddle River, NJ. 2005.

Decompose the Problem into Parts

Identify software parts until all are known

Stop when you arrived at *one possible way* to build the system

Write Tasks

Write the tasks tied to features or software parts.

Since this is a personal project plan: you will be doing the tasks in the order in which you write them down.

Sample: Task List

7	Assembly	Phase	Generate Task List / Update Task and Schedule Plan — Task	Estimated Size	Size Measure	Rate (per Hr.)	Time in Phase %	Estimated Hours	Engrs	Plan Hours	Plan Date	Plan Week	Actual Hours	Actual Date	Actual Week
8	BSC	DLD	Design search criteria component(s)					2.5	1.0	2.5	26-09-05	1	1.4	27-09-05	1
9	BSC	DLDR	Review search criteria comp. design (defect checklist!)					0.5	1.0	0.5	26-09-05	1	1.0	27-09-05	1
10	BSC	DLDR	Revise design per review search criteria component					1.0	1.0	1.0	26-09-05	1	0.2	27-09-05	1
11	BSC	CODE	Impl. search criteria component					3.0	1.0	3.0	26-09-05	1	2.5	27-09-05	1
12	BSC	CR	Code review search criteria component (defect checklist!)					1.0	1.0	1.0	26-09-05	1		28-09-05	1
13	BSC	CR	Fix and log defects uncovered by CR criteria component					1.0	1.0	1.0	26-09-05	1		28-09-05	1
14	SYSTEM	MGMT	MILESTONE 1 - Criteria component complete (2 days)					0.0	1.0	0.0	26-09-05	1			
15	BSC	CODE	Create login and landing page for BSC					2.0	1.0	2.0	26-09-05	1	1.3		
16	BSC	CR	Code review login and landing page					0.5	1.0	0.5	26-09-05	1			
17	BSC	CR	Revise login and landing page per code review					0.5	1.0	0.5	26-09-05	1			
18	BSC	DLD	Design dependency injection for Tap 3.0.3 pages					2.0	1.0	2.0	26-09-05	1			
19	BSC	DLDR	Review dependency injection 3.0.3					1.0	1.0	1.0	26-09-05	1			
20	BSC	CODE	Implement dependency mechanism					2.0	1.0	2.0	26-09-05	1			
21	SYSTEM	MGMT	MILESTONE 2 - Bsc login & landing page (2 days)					0.0	1.0	0.0	26-09-05	1			
22	BSC	DLD	Design tab/lhs navigation framework/components					4.0	1.0	4.0	03-10-05	2			
23	BSC	DLDR	Revise design of components per DLDR					2.0	1.0	2.0	03-10-05	2			
24	BSC	CODE	Impl. tab/lhs navigation framework/components					4.0	1.0	4.0	03-10-05	2			
25	BSC	CR	Code review tab/lhs nav components					1.0	1.0	1.0	03-10-05	2			
26	BSC	CR	Revise component impls per CR					1.0	1.0	1.0	03-10-05	2			
27	SYSTEM	MGMT	MILESTONE 3 - tab/lhs/results comp. complete (3 days)					0.0	1.0	0.0	03-10-05	2			
28	BSC	CODE	Create first search page for BSC					4.0	1.0	4.0	03-10-05	2			
29	BSC	CR	Code review first search page					1.0	1.0	1.0	03-10-05	2			
30	BSC	CR	Revise per CR first search page					0.5	1.0	0.5	03-10-05	2			
31	SYSTEM	MGMT	MILESTONE 4 - Create first search page (2 days)					0.0	1.0	0.0	03-10-05	2			
32	BSC	PLAN	Break out rest of BSC pages tasks					1.0	1.0	1.0	03-10-05	2			
33	BSC	CODE	Create rest of BSC pages	5	EA	0.5		10.0	1.0	10.0	10-10-05	3			
34	SYSTEM	MGMT	MILESTONE 5 - Bsc webapp (3 days)					0.0	1.0	0.0	10-10-05	3			

Estimate Tasks

Estimate duration in hours. All other measures hide too much useful detail.

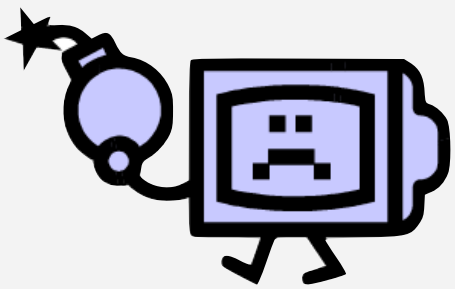
Use any data from similar projects that you can put your hands on.

Estimate one of a set, then extrapolate.

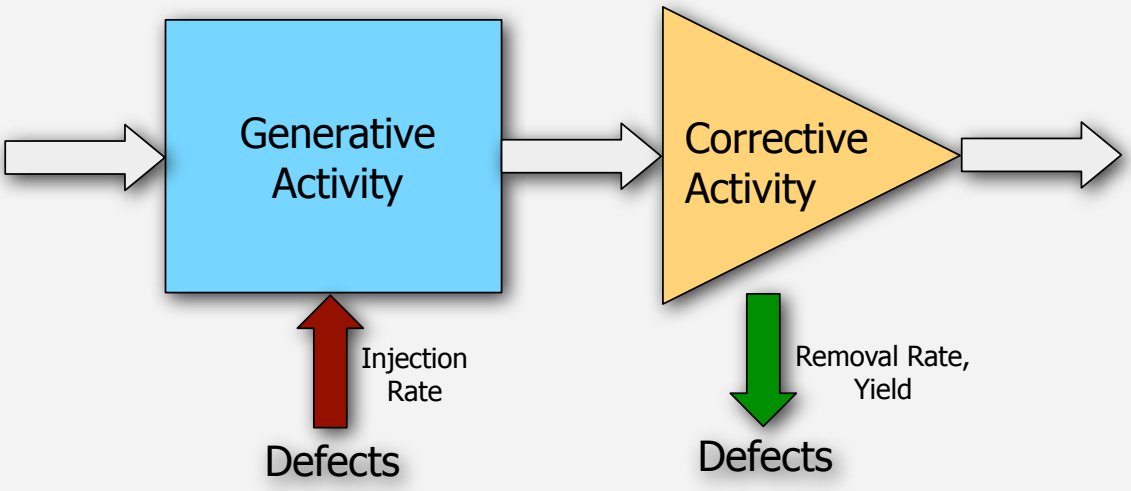
Plan for Quality Work

There will be defects in every work product.

Might as well plan on removing them.



Plan for Quality from the Start



Establish a Schedule

This is your commitment to this project.

You are saying that you'll work this number of hours per day/week/month on this work.

Track Effective On-Task Time (EOT)

The time effectively spent on project work.

Doesn't include:

- » Reading email (usually even if it is project related)
- » Meetings (except well-defined project meetings)
- » Lunch time, breaks, phone conversations, etc.

Measure your EOT per week.

- » Best organizations in the world get 20+ hrs/week.
- » You may only get about 3-5 hrs/wk the first week. You should get up to 15 hrs/wk in a few weeks.

Document Assumptions

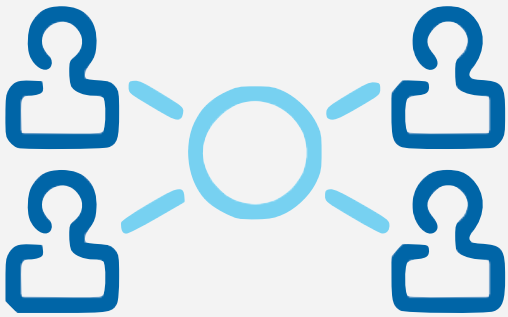
Typical assumptions:

- » So and so will do something
- » Such and such component will be done by...
- » This or that feature is in or out
- » The product will be ready by the big show...
- » The support is handled by some other team
- » I'm not going on vacation in August

Account for Dependencies

Insert tasks for:

- » Work product you need to get
- » Work product you need to produce for others
- » You may need to add tasks to remind others...



Review and Replan Often

Start with the analysis, top-down.

End with synthesis, bottom-up.

- » The plan must add up to functioning software.

Review at least weekly:

- » Do the tasks represent the work that still needs to be done?
- » Do the assumptions hold?

Conclusion

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"You can be sure our plan was perfect. It's just our assumptions were wrong."

Ken Olsen
Founder & CEO
DEC (for 35 years)
1991

Your Letters & Comments are Welcome!

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Visit: http://steven.teleki.net/
- Software Development Reading List
- Slides from this and previous talks

