Comp8081
Management Issues in Software Engineering

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Agenda

- Attendance
- Assignments 1 & 2
- Review: Estimation & Scheduling (McConnell Ch. 8 & 9)
- Customer Oriented development (McConnell Chapter 10)
- Myers-Briggs Type Indicator (MBIT) Assessments
- Midterm Review

Assignment #1

- Marks and some comments posted on D2L
  - 50% - 90%, average 70%, 2 with no submission
  - 54% - 92%, average 73%
- Waterfall misconception: It is not a totally rigid process where you cannot go back to previous phases, it is just more difficult to go back
- Agile is a higher level methodology, while Scrum is one prescriptive framework that falls under the Agile umbrella. Don't get them confused. The two words are not interchangeable.
- McConnell's Rapid Development approach is not a prescriptive methodology, and it is not the same as **R**apid **A**pplication **D**evelopment (RAD).

Assignment #2

- Groups are formed
- **Wednesday March 7, 11:59pm:**
  - **EVERYONE** must submit presentation
- March 8 Groups 1, 2, 3
- March 15 Groups 4, 5, 6
- March 22 Groups 7, 8, 9

Review

Estimation and Scheduling
- McConnell, Chapters 8 & 9

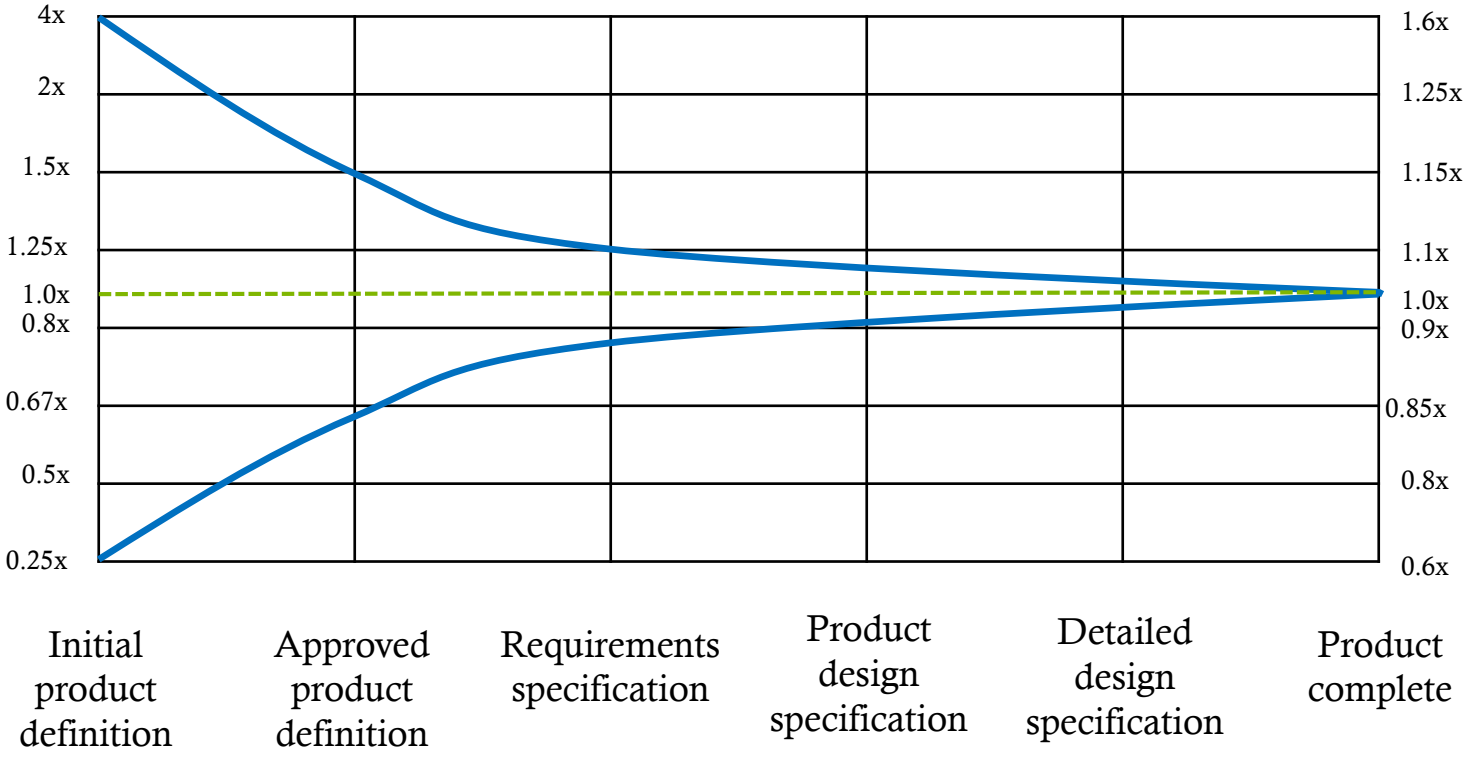
Estimate-Convergence Graph

Variability in the estimate of Project Scope (effort, cost, features)

The "Cone of Uncertainty"

Based on common project milestones

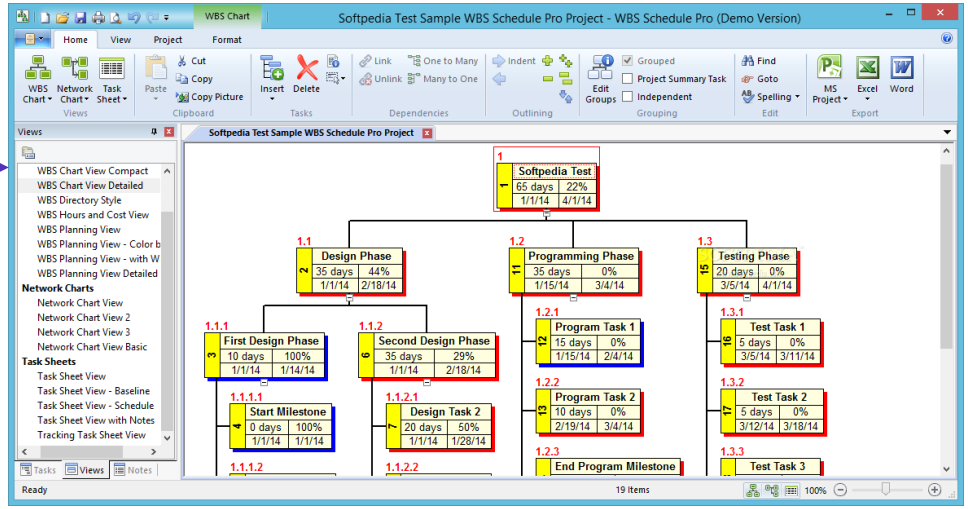
Project Schedule



Methods of Estimation

- **Historical Data**

- Bottom up approach (WBS)
  - Break down work into smaller tasks
  - Estimate effort of tasks
  - Sum them upwards



- Function points (McConnell pg 174)
  - Based in inputs, outputs,inquiries, internal/external interfaces
  - Calculate function points, then compare to historical work

- 3-point or PERT
  - [Optimistic + (4 * Most Likely) + Pessimistic] / 6

Methods of Estimation

- Delphi
  - Anonymous polling of large groups of experts
- Scrum: story points
  - What is a "point" worth?
    It's all relative, but the system must be consistent

Example of story point estimation:

- hand everyone cards (0, 1, 2, 3, 5, 8, 13, 20)
  - display at the same time (no influence)
- discuss high/low estimates
- come to a consensus, timebox (X minutes per story estimate)

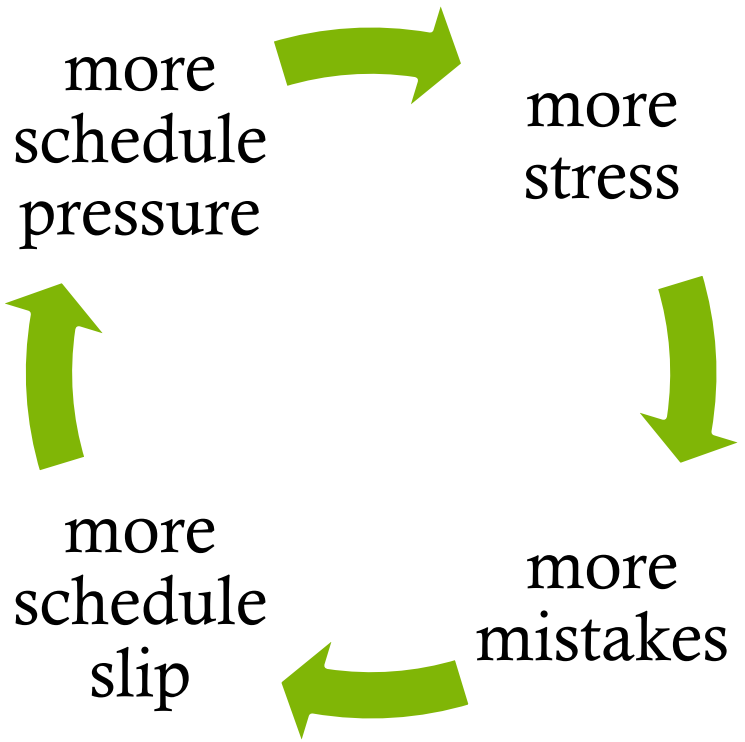
Estimation Tips

- Avoid "off-the-cuff" estimates
- Allow time/plan for estimate
- Use previous project data
- Use developer-based estimates
- Estimate by walk-through
- Estimate by categories
- Estimate at low level of detail
- Don't omit common tasks
- Use several techniques and compare results
- Recalibrate

Discuss how Agile plays a role in recalibrating estimates

Scheduling

Chapter 9

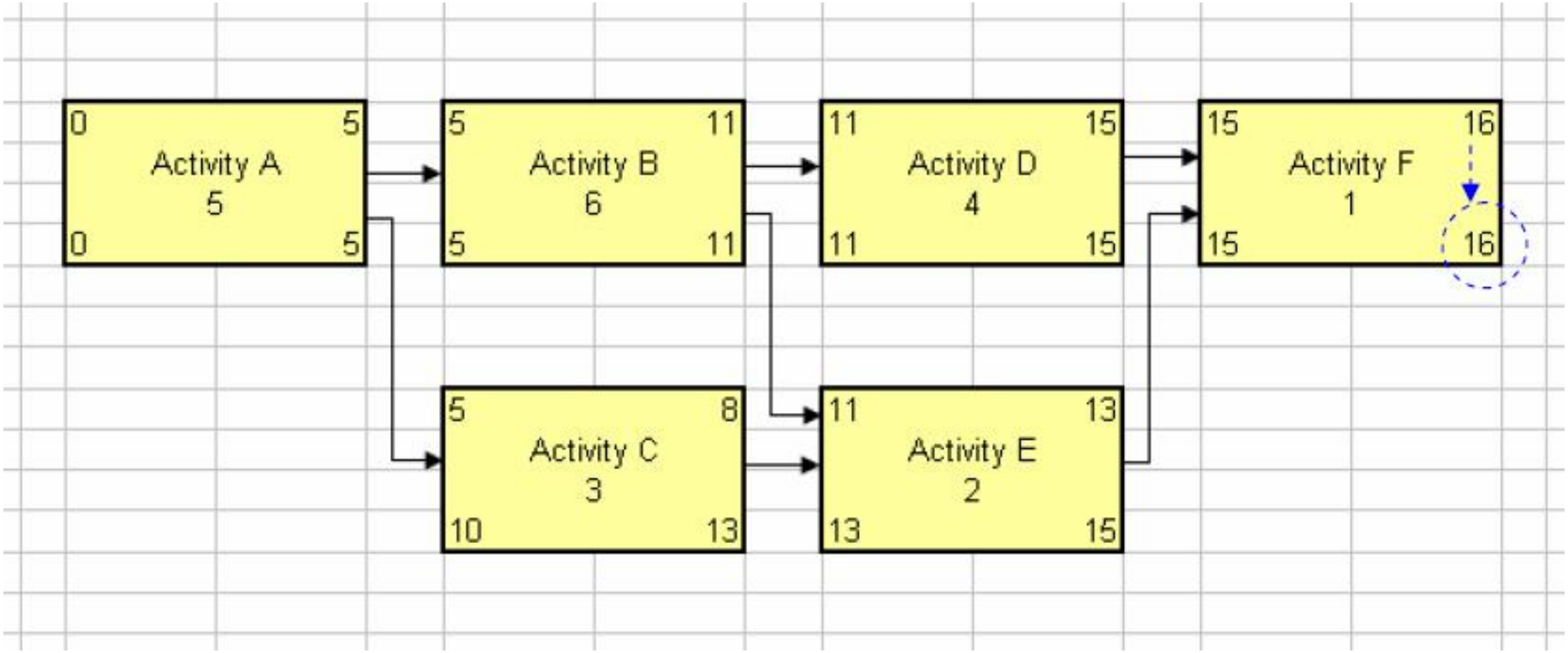


Overly Optimistic Schedules

- External immovable deadline (tradeshow, Christmas, regulations)
- Sales people under estimating (trying to make the deal)
- Upper management choosing “best case scenario” rather than a range
- Manager ineffective during customer negotiations
- Project Manager believes team will work harder with tighter deadlines
- Developers under estimating (too confident of skills)

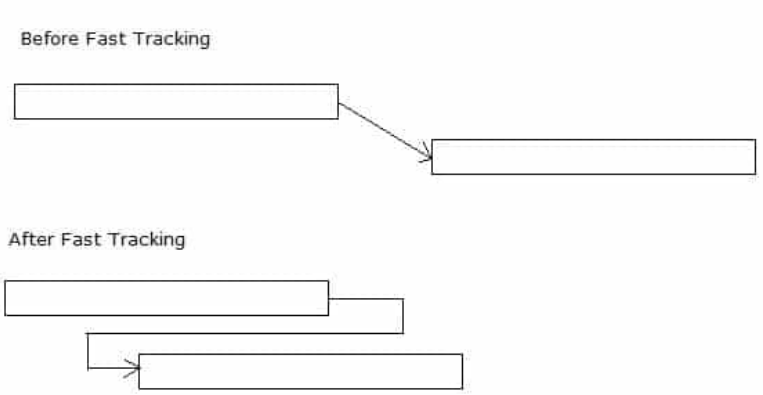
Critical Path Method

- Forward pass, then Backward pass → determine Float

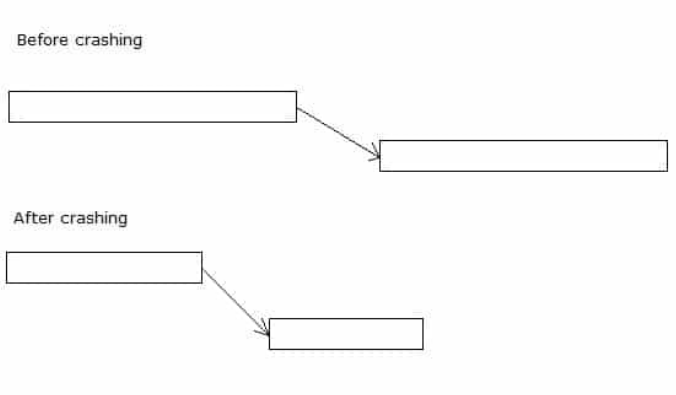


Schedule Compression
look at the Critical Path

Fast Tracking



Crashing



- BUT at some point, that's it,
  your schedule cannot be compressed any further

Customer-Oriented Development

Chapter 10

Some Questions to Start

- What do we mean by "customer oriented"?
- How do you know who your customer is – or is not?
- Why might it be important to be "customer oriented" in your development projects?
- What is "success" or a "win" in a software development project?

Reasons for Project Success

- As per the CHAOS report published in 1994 by Standish Group, the top 3 factors for project success were:
  1. User Involvement
  2. Executive Management Support
  3. Clear statement of requirements
- As per the 2015 report:
  - **User Involvement** & Executive Support continue to be 2 of the top 3 factors for project success

One Definition

"a customer is anyone who can hinder or enhance the saleability or (even more importantly) business benefit of your product. Such people are involved in all stages of the project, including oversight, development, production, and delivery."

- *Lean Software Strategies: Proven Techniques for Managers and Developers*
- Peter Middleton and James Sutton, 2005

McConnell's Definition

Customer's Importance to Rapid Development

Improved efficiency
- Tasks take less time

Dimension of Development Speed: Process
- Less rework
- Reduced risk
- Lack of friction
  - Eliminate this "Classic Mistake"

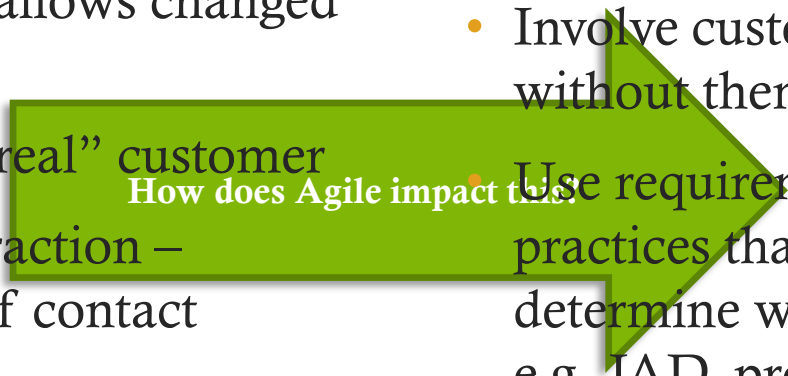
Customer-Oriented Practices

- Planning
- Requirements Analysis
- Design
- Construction

Plus, Manage Customer Expectations

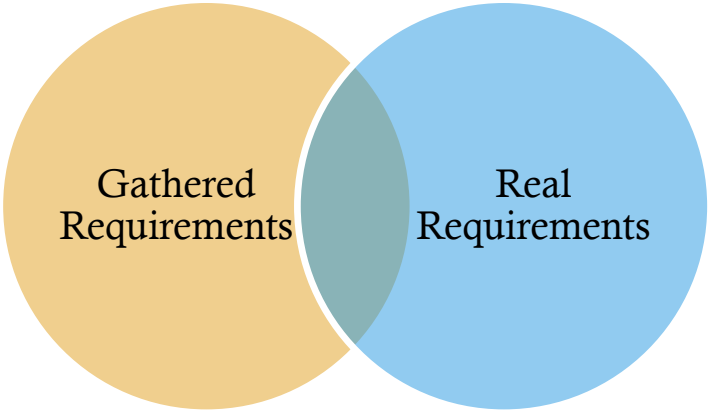
Customer Oriented Practices

- Planning
  - Select an appropriate lifecycle model that provides signs of progress and allows changed requirements
  - Identify the "real" customer
  - Efficient interaction – single point of contact
  - Think "win-win"
  - Manage risks



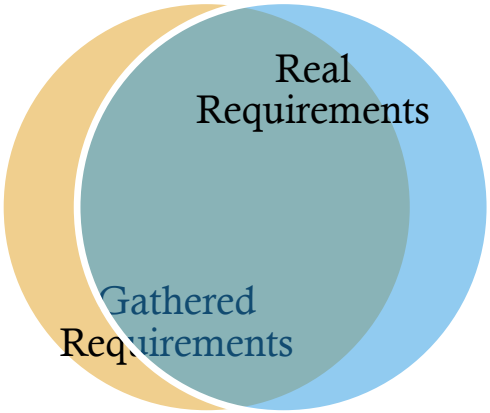
- Requirements Analysis
  - Gather the "real" requirements (ask "why")
  - Involve customers closely without them writing specs
  - Use requirements-elicitation practices that help customers determine what they want – e.g. JAD, prototypes, etc.
  - Use tools such as focus groups and surveys
  - Anthropology

Customer Oriented Practices



"Typical" requirements gathering processes

How do customers actually articulate what they want?



Customer-oriented requirements gathering processes

p. 240

Customer Oriented Practices
Requirements

Understand Real Requirements:

- How do you know what "real requirements" are when you see them?
- Who collects and manages requirements, real or otherwise?
- Who has the greater responsibility?
  - Dev team to learn about the customer's needs and goals?
  - The customer to learn about technology constraints and architecture?

Customer Oriented Practices
Engagement

- How do you actually engage/involve customers in a development project?
- In what role(s) do you engage customers – and who manages them?
- What challenges to customer engagement can you identify, from different perspectives (theirs/yours)?
- How long should customers be engaged?

Customer Oriented Practices

- Design
  - Employ design practices that enable customers to "change their minds"
- Construction
  - Use implementation practices that enable quick, efficient response to customer changes
  - Use progress-monitoring practices that increase visiblity

Does Agile impact any of these elements? How?

Managing Expectations

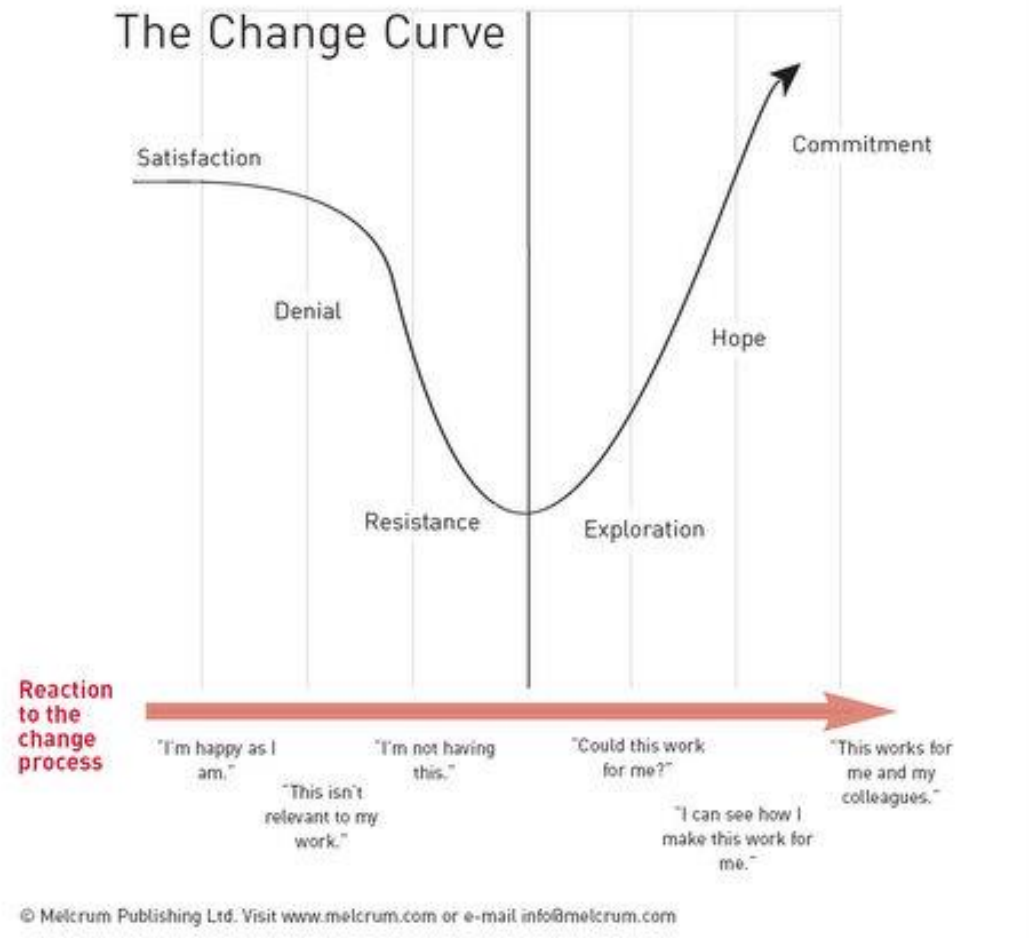
- Classic Mistake: Unrealistic Expectations
- What are “expectations” and how do you manage them in our context?
- Whose expectations need to be managed on a software development project?
- How have you done at managing expectations in your experience?

Managing Expectations

There is LOTS of advice out there on how to do this

- From Forbes.com (Annie Scranton)
  - Be honest from the start
  - Under-promise, over-deliver
  - Anticipate customer needs
  - Constant communication
  - (Status) Reports
- Adapted from Entrepreneurs-Journey (Yaro Starak)
  - Expectations are based on what has come before (begin as you mean to go on)
  - Don't assume everyone knows what is going to happen next

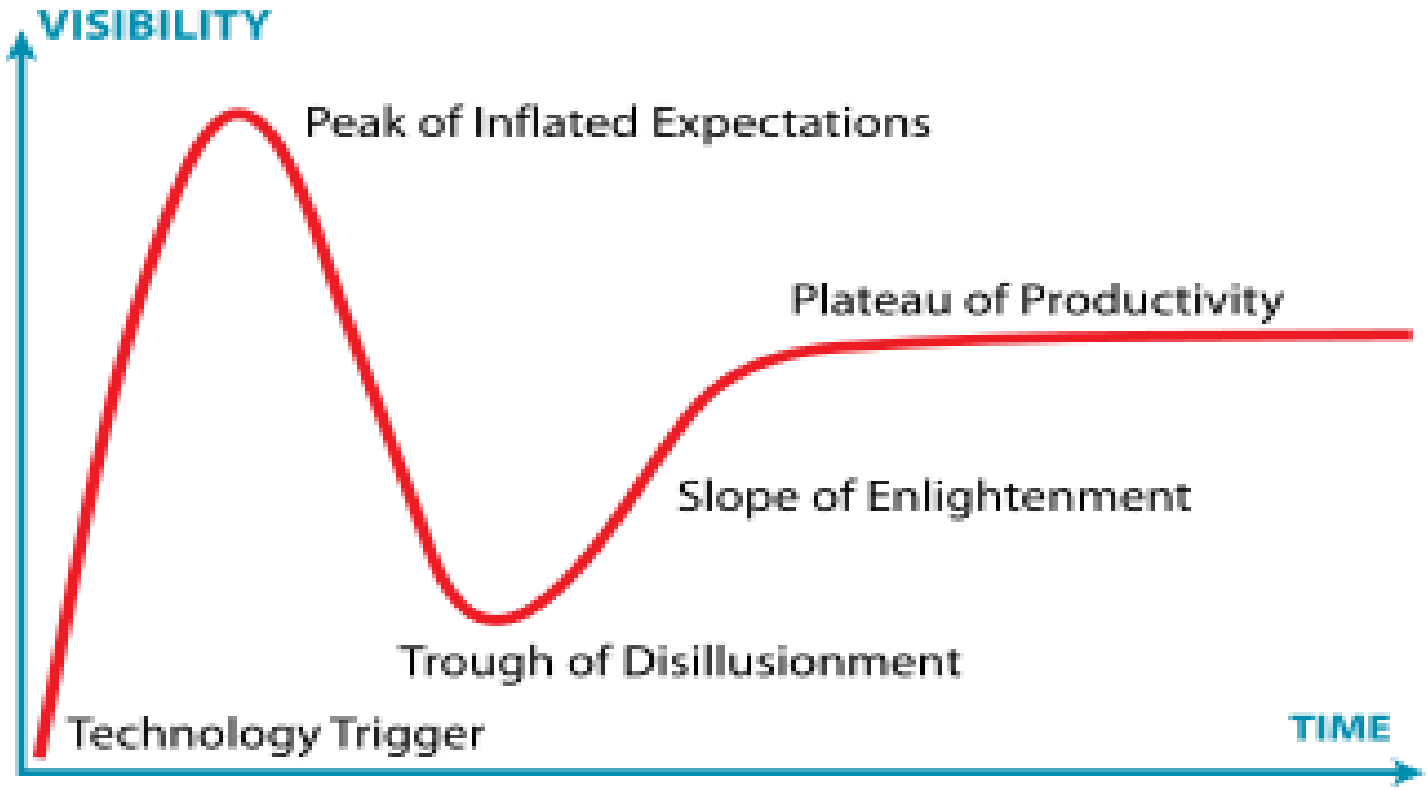
The Change Curve



- Based on work of Elisabeth Kubler-Ross, "Five Stages of Grief"
- Important to understand what customers might be feeling/thinking
- Development projects are change/impactful
- Can progress through the process but also slide back

From "rule-of-thumb.net" and Melcrum publishing

The Gartner Hype Cycle



- Hype cycle for technology adoption
- What does it tell us?

Image from Wikipedia and based on the work of Gartner Inc.

What is a Trusted Advisor

- Definition from Darryl Conner – connerpartners.com
  - A trusted advisor is a practitioner who has earned the right to be exceptionally influential when helping sponsors or agents develop the understanding, commitment, and alignment needed to fulfill their roles in the change process
  - This status represents the highest level of credibility and reliability one can achieve with a client
- How do you achieve this status?
- Where is the onus to learn domain subject matter expertise?

Questions

Scenario	Question
Customer says, "I really need this product to do this specific bit of functionality" e.g. "I need to do this action and have everything turn blue"	Is this a "real requirement"? Why or why not?
Customer says, "the project absolutely needs to be completed on time or there will be bad consequences"	How do you manage expectations?
Agile is a good lifecycle model for meeting McConnell's guidelines for customer-oriented development.	Do you agree? Why or why not?
Customer says, "this is a critical requirement which must be included now", and you know the schedule will be impacted as a result	How do you respond? Why do you respond that way?
Market research shows that customers are expecting certain functionality in products like yours	Is this a real requirement? Why or why not?
You can only involve customers on projects when they are internal to an organization.	Do you agree? Why or why not?

Anti-Patterns

Not the right customer representative(s):

- The Uninformed
- The Unempowered
- The Anti-Sponsor
- The Drive By

You want someone with authority to make decisions, and who can provide input on behalf of the end users (or at least coordinate this).

Signs of too much customer involvement:

- No central point of communication
- Direct developer communication
- Never ending review cycles

Addressing Issues in Customer Relationships

- PMI says: don't manage Customers, manage Customer **Engagement**
- It is difficult to address specific customer personalities
- Need to manage the anti-patterns instead
  - Develop a Communication Plan; make it part of the contract if possible.
  - Ensure all deliverables are reviewed internally before being sent to the customer.
  - Coach developers on how to deal with customer interaction.

Myers-Briggs Type Indicator (MBIT) Assessment

In Class Assessments

- Complete these two MBTI assessments
- Together, they should take 10-15 minutes to complete
- You may get different results from each test
  1. http://artofthinkingsmart.com/thomas/MBTI/start.html (Thomas
  2. http://www.humanmetrics.com/cgi-win/jtypes2.asp (Jung)

- Email your results to dturner80@bcit.ca in the following form:

  Thomas: ESTP

  Jung: Extravert(1%) Sensing(6%) Thinking(1%) Perceiving(19%)

We will analyze our results next class.

Review: Midterm

(go to other set of slides)

For Next Week (week 9)

To Do before next class:

- Do the 2 Myers-Briggs Type Indicator (MBIT) assessments
- Email the results to dturner80@bcit.ca

Reminders:

- Assignment 2 due in D2L before next class

Class Exercise

If time; On D2L

Comp8081

end of Week 8

Donna Turner