

# Project Scheduling for Techies or

Why your significant other  
doesn't believe you when you  
say one more minute on the  
computer...

by Linda McInnis

# What we will discuss

- Why is Scheduling so hard?
- What is the Impact of Poor Software Scheduling
- How we can do better
  - ◆ As Individuals to learn to make better estimates
  - ◆ As a team to make and keep better schedules

# What effect does bad scheduling have?

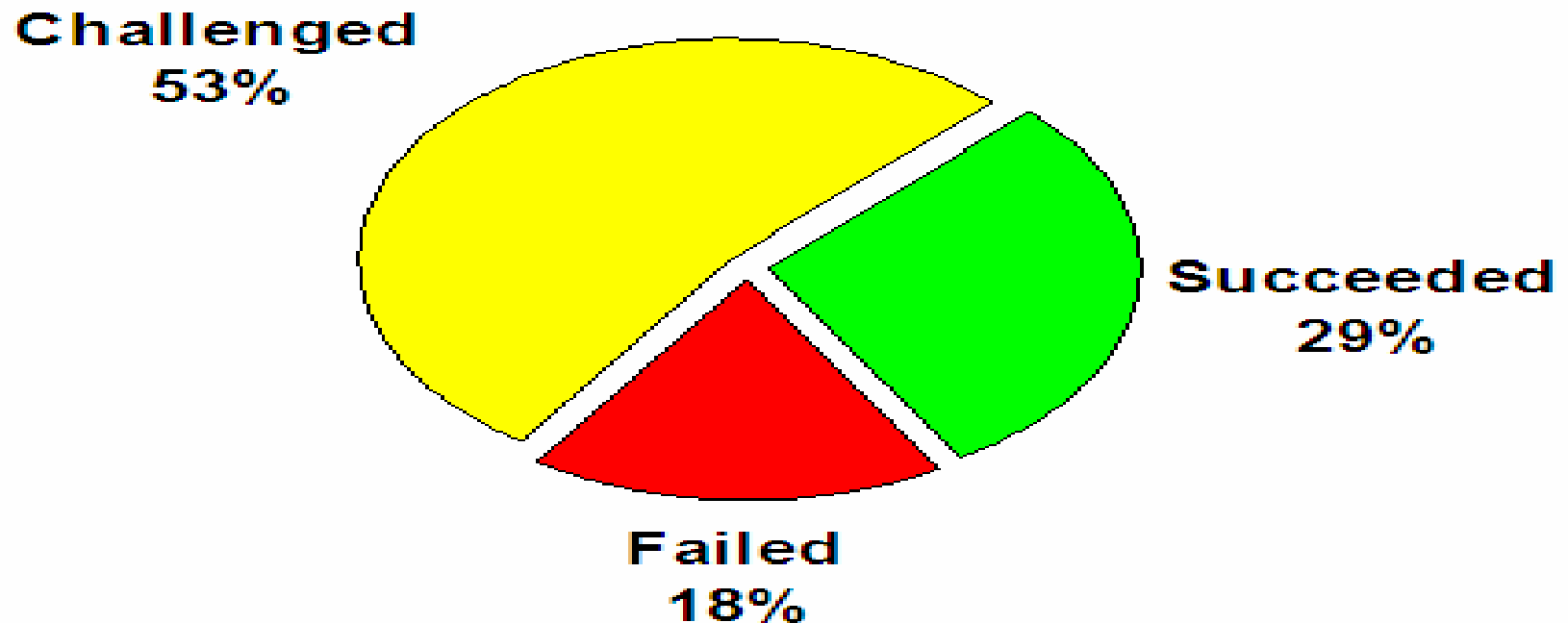
- “The Standish Group, which exists solely to track IT successes and failures, sets out very strict criteria for success. For its Chaos Report, The Standish Group surveyed 13,522 projects last year and showed that unqualified project successes are well below 50 percent, 34 percent to be exact. Out-and-out failures, defined as projects abandoned midstream, are at 15 percent. Falling in between the two are completed but “challenged” projects. The report says challenged projects represent 51 percent of all IT projects and are defined as projects with cost overruns, time overruns, and projects not delivered with the right functionality to support the business.”\*

\*[http://www.infoworld.com/article/04/08/13/33FEmyth5\\_1.html?s=feature](http://www.infoworld.com/article/04/08/13/33FEmyth5_1.html?s=feature)

# CHAOS 2004

## SURVEY RESULTS

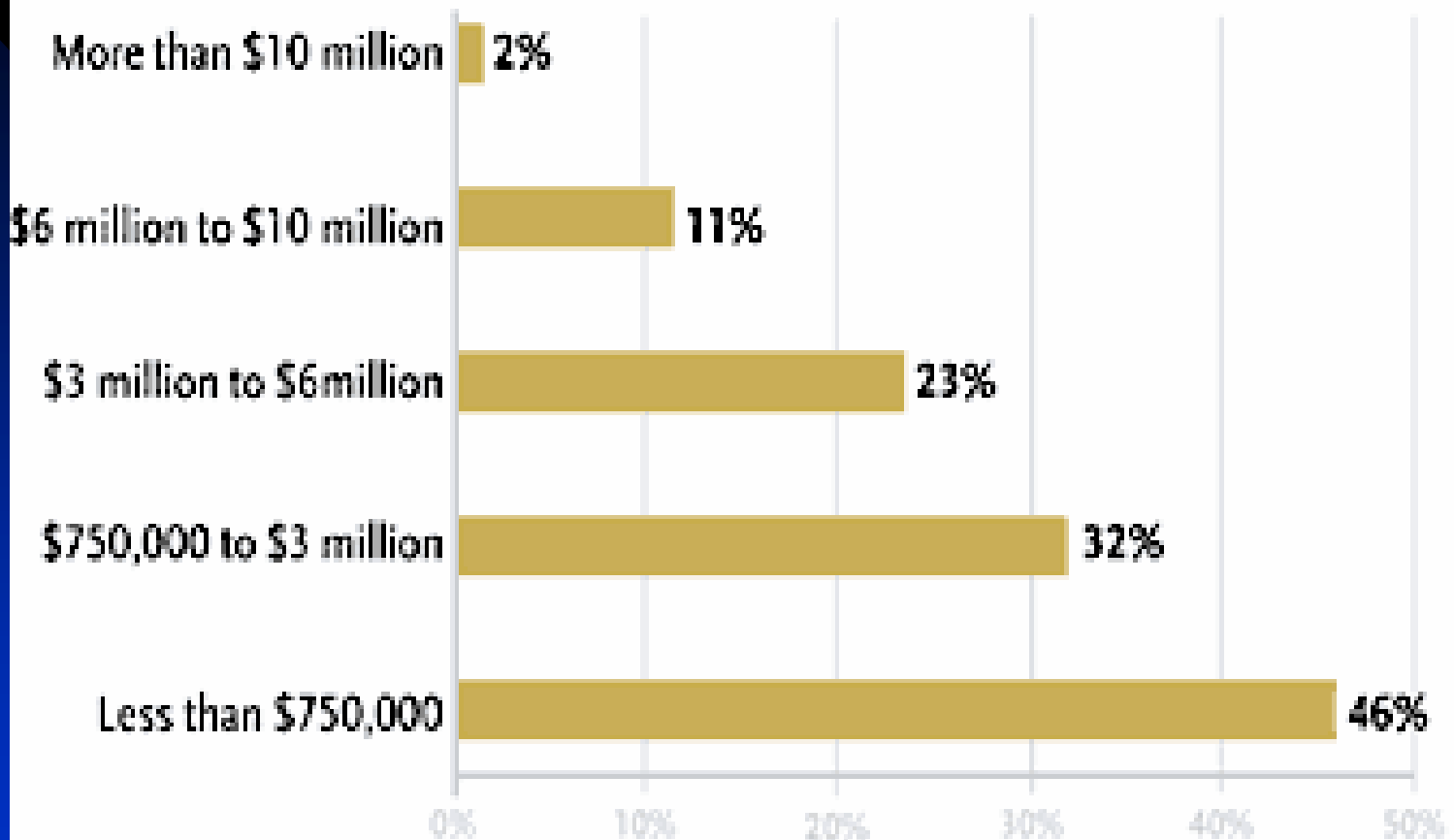
### Resolution of Projects



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# Project Success

Smaller initiatives fare better at reaching goals than larger projects do.



SOURCE: THE STANDISH GROUP

\*[http://www.infoworld.com/article/04/08/13/33FEmyth5\\_1.html?s=feature](http://www.infoworld.com/article/04/08/13/33FEmyth5_1.html?s=feature)

# Okay, this looks pretty bleak – what are some of the reasons

- Unrealistic Project Goals
- Bad Requirements
- Use of unknown technologies
- **Poor Project Management**
- Project Goals
- **Project Planning**
- **Project Estimates (Project & Individual)**

# Why is it this way?

- Why are we so bad at predicting what and when we are going to do something in software?
- How do we make our estimates and schedules?
- How could we do it better?

# What part do we play in this drama?



- Machismo during scheduling
- Fear of disappointing
- Complete lack of knowledge
- Temporal Dysphoria
- The Road Forks



# Machismo during scheduling and the Fear of disappointing

- I can program that widget in 10 lines of code
- No, I can do it in 6.....
- Well, if I say it will take longer than 2 days, they won't like me (or give me a promotion or...)



# Complete lack of knowledge



- “Oh, my goodness, they want me to do what!!!”
- The sweating palms set in
- The feeling of Vertigo takes over
- I’ve got to say something....
- I can do it by next week


# The Road Forks

- Plans go awry
- Venture dries up
- What was a good idea suddenly is poor because of a breakthrough technology
- It just takes too long



# Why are we so bad at predicting what and when we are going to do something in software?

- We **hope** that we know what we're saying
- We rarely **know** by making estimates and checking their accuracy
- Knowledge work is inherently different than procedural work or manufacturing or assembly – it does not follow a logical-sequential flow

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- How many of you make estimates that are accurate???

# Everyone Stand up

- Sit down when you think 30 seconds has elapsed

# How do we make our estimates and schedules?



- Guesses
- Wishes & Hopes
- Work Breakdown
- Task breakdown

# Which do you think works?

Things that don't work so well

- Guesses
- Wishes & Hopes

Things that work well

- Work Breakdown
- Task breakdown



# How could we do it better?

- Some observation
- Some practice
- Some experiments

# Make an estimate

Start small with every day tasks

1. Estimate how long it takes you to get to work each day for two weeks
2. Track how long it actually takes you to get to work for two weeks

# Compare Estimate with Actual

	Estimate	Time Left	Actual	Diff	Comment
Mon	15 min	8:10	10	-5	No traffic
Tue	15 min	8:30	21	+6	Caught all the stoplights
Wed	15 min	8:20	14	-1	Traffic okay, lights were good
Thu	15 min	8:15	15	0	Woo hoo! It worked

# What time should you leave on Friday to spend the least amount of time in the car?

	Estimate	Time Left	Actual	Diff	Comment
Fri	15 min	8:15	Didn't get there	+24 hours	Gas Leak at the end of the driveway – police wouldn't allow us into work

# So the estimate didn't work now what?

- Always have a back up plan
- Get as much information as possible to decide on
  - ◆ Short term plan
  - ◆ Long term plan
- Just do it – do not hope, wish, pray, whine, complain

# So does anyone else do better?

- Academics

“When asked to estimate the duration of various academic-type tasks (e.g., the time needed to complete a writing assignment, solve a series of problems, or read a manuscript), subjects demonstrated a marked tendency to trade accuracy in favor of minimizing cognitive effort in their selection of planning strategies. This tendency resulted in a drastic underestimation of the time required to complete the task.”

# Why do our estimates miss often?

## Temporal Dysphoria

- Attention Deficit
- Asperger's
- Selective Autism
- And just plain Flow

# Characteristics of ADHD

## Inattention

- difficulty organizing tasks
- difficulty staying on task (quick loss of interest) and maintaining effort
- difficulty with transitions or prioritizing tasks, following instructions, and completing school work
- problems with misplacing things needed for tasks
- becoming easily distracted by extraneous stimuli
- difficulty remembering daily activities



# Flow

- Flow as characterized by Mihaly Csikszentmihalyi

“Flow is the mental state of operation in which the person is fully immersed in what he or she is doing, characterized by a feeling of energized focus, full involvement, and success in the process of the activity.” \*

\*[http://en.wikipedia.org/wiki/Flow\\_\(psychology\)](http://en.wikipedia.org/wiki/Flow_(psychology))

# But how does a team cope with all these possible problems in scheduling?

1. Make sure requirements are firm (PM & team work with users to understand what you need to build)
2. Get Upper Management commitment to good scheduling practice and tracking
3. Use good scheduling methods
4. And good individual estimates with uncertainty factors

# Good Requirements

- Use something like Volere
- Prototype and check with users to see if you're on track – adjust schedule if necessary
- Know what you must have in the project for it to be considered a success
- Know and get agreement on what would be nice to have but not guaranteed
- Evaluate using Risk based analysis

# Management Support

- Schedule forward not backward
- Commitment to quality-schedule will bump if necessary
- Feature Priorities (Must haves versus Nice to have)
- Ship date is based on data not frenzy

# Good Scheduling Practice

- Yellow Stick Method
- Effort and Risk based schedules
- No backward scheduling
- Use best and worst case time frames
- Don't forget holidays, vacations and down time
- Make a back-up plan with the team – who could take over if someone leaves, is disabled, has an emergency
- It takes what it takes

# When should you try to make an estimate:

- When you have done the work before
- When you feel certain you know what you're building
- Your gut is calm

# When should you NOT make an estimate

- When your Vice President is standing in your cube
- Just after your boss has chewed you out
- When the whole team is staring at you.

# Some things to do to get breathing room

## What Happens:

- The whole team is staring at you waiting for a response

## What you might do:

- Ask each one a question about what you are being asked to estimate:
  - ◆ Example: What are the vacation schedules?
  - ◆ Example: What is the expected quality?



# Manage the Schedule

- Check the schedule every day
- Track the actual versus the projected
- Allow no more than 1 day slip

# Next Steps

- Some of the very things that impede scheduling make you great at your job
- Accept who you are and
- Learn how you estimate and plan
- Practice, practice, practice
- Keep track of your success and failures and
- Keep trying! You will get better the more you practice
- Do a Lessons Learned at the end

# Questions?

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