Complex Backlogs

Complex Backlogs

Scrum Gathering, 2008

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Warnings

- In this class you'll be discussing things with other participants… so gather together in clumps
- I have lots of UML in here
- I have a bell
- I have a timer

- So, let's have some fun!

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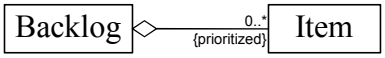
Complex Backlogs

Definition of Backlog

A prioritized list of functional and nonfunctional requirements and features to be developed.

(Schwaber: the Enterprise and Scrum, pg 114)

Straightforward and simple, right?



- Notice that the focus here is on development…

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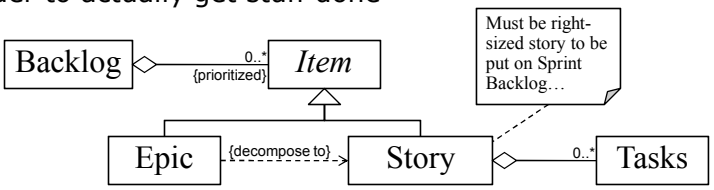
Warmup: Stories and Epics

- Some Items are big, and some are small
- Some are doable right away, some aren't
- I'll make a simple distinction
  - (right-sized) Stories are items that the team can commit to doing and decompose to Tasks
  - Epics are items that are too big, unknown, complex, or risky for the team to commit to
    - Epics must be decomposed into right-sized stories in order to actually get stuff done



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Question…

- How do you manage epics in your organization?
- How small are the stories you commit to?
- How do you trace Stories back to the Epics them come from?
- Who does this?

- 5 minutes

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And that's only half the story…

- The Business Owner and Stakeholders also use the Backlog to
  - Understand and explain what is happening, and what will be happening
  - As the basic tool for Release Strategies and managing the business cycle
  - Understand who is spending their money, what they're spending it on, and when they will be spending it
  - As a basis for understanding of the ROI they are receiving from their teams
  - Etc…

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Complex Backlogs

Scenario for Class

- Company: Dynamic Systems Development (DSD)
  - 30 people
  - Develop websites for people
  - Have their own framework
- Teams:
  - CatAir – developing Catalina Airlines website
  - SouvSite – developing e-commerce site for Time Square souvenirs
  - Support – develops framework, ongoing maintenance
  - Mgmt – personnel, sales/marketing, facilities, etc

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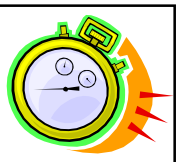
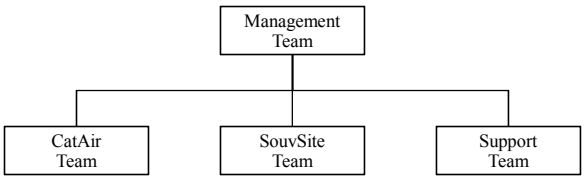
Question…



- How many backlogs does DSD have?



- How are they prioritized?
- 2 minutes…

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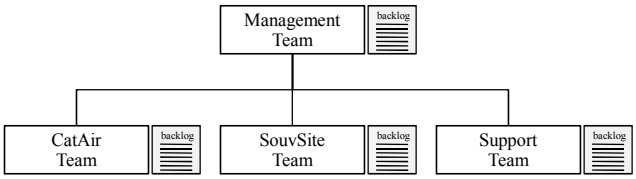
Option 1: 4 Backlogs

- Each Team has its own Product Owner, and its own (independently) prioritized Backlog



- This whole thing could be considered the Organization's Backlog, right?
- Who do you think the POs are?

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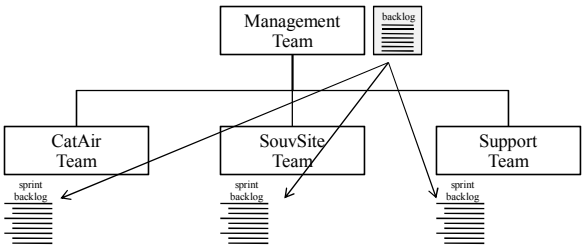
Option 2: 1 Backlog, 4 Sprint Backlogs

- Another possibility, with a single unified prioritization



- What are the pluses and minuses of this one?
- How many POs are there?

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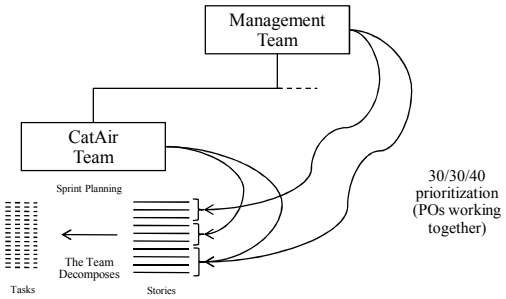
Option 3: "30/30/40 Rule"

- Allow "PO in the sky" to prioritize value-producing work, but allows "local PO" to prioritize chores



- What are the pluses and minuses of this one?

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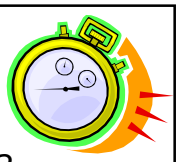
Question...



- How does your organization prioritize things?
  - Across teams
  - To provide "unified" ROI
  - So that it all "comes together"

- 5 minutes

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Enough about Prioritization

- Let's talk about some structural issues of backlogs
  - Types of Work
  - Decomposing Epics
    - Where do stories come from?
    - How do they "add up"?
  - Dependencies between stories/epics/items
  - Farming out Work to other teams
- And some of my suggestions of how to deal with them…

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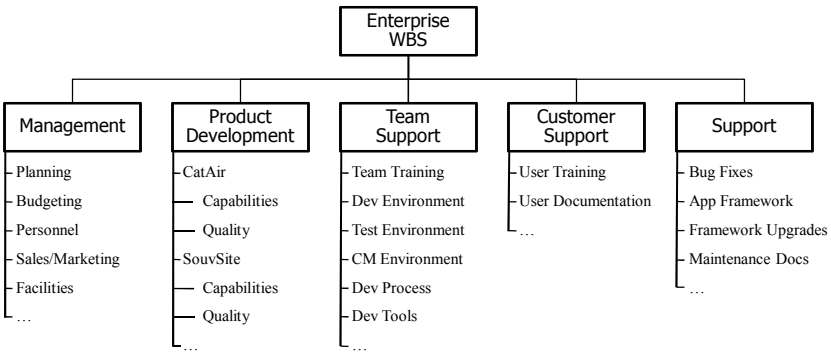
Types of Work (Enterprise WBS)

- This is an organizational structure, not a plan



- Backlog has stories from "all over" your WBS…

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The Work Breakdown Structure

- Is used by the business to monitor expenses
- It is used to budget
- It captures information from our TimeSheets
- Therefore
  - Our stories should coexist peacefully with the timesheets
    - Remember that we only do work on stories, not epics
  - My suggestion is that timesheets capture Hours/Story
    - Not at the Task Level
    - Can be converted to $/Story if needed
  - Stories are the unit of negotiation, of "doneness", of value provided to the business

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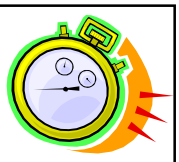
Backlog Items have Attributes



- The Story/Epic itself (what are we asking for?)
- Which Backlog it belongs to (who's doing it?)
- The Sprint it's in (when will/did it happen?)
- What WBS item it belongs to (category of work?)
  - *And we haven't even talked about decomposing epics yet…*
- How do you handle these issues currently?
- 5 minutes…

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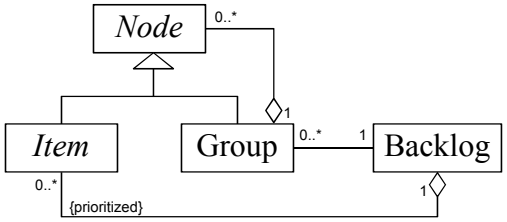
Tentative Solution – Groups

- Group – a collection of items and/or sub-groups that all belong to the same Backlog. A group may have sub-groups that belong to other backlogs
- So, a backlog consists of all the items that belong to the groups that are associated with it



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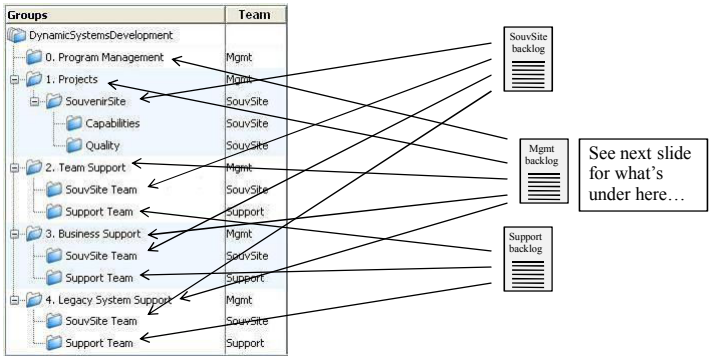
Example

- This is simplified, and leaves out CatAir Backlog



- Note that has nothing to do with prioritization

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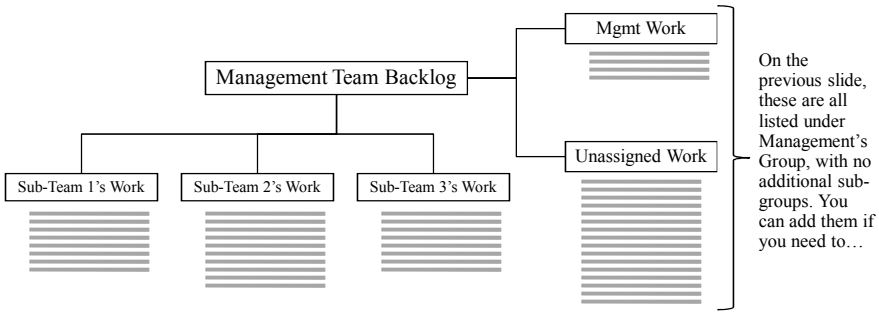
Management Backlogs Explanation

- Parent organizations often Items of their own
  - They are doing themselves
  - That are unassigned to sub-teams yet



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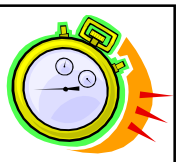
So Far, Groups Allow us to



- Combine the
  - "who does it?" (associated backlog) and the
  - "what is it?" (WBS)

  views,
- And have backlogs that allow prioritization and are used to drive the team
- And, as we'll see next, they also allow us to handle epics
- Talk amongst yourselves and prepare questions for me…

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Epics

- Remember, Epics are Items that are too big, unknown, complex, or risky to be committed to
- Often represent Features or Capabilities
  - Use Cases, as a Verb phrase
    - Schedule Onsite Course
    - Create Payroll File
  - As a FDD (feature driven design) feature set, in the form <action>ing a <object>
    - Modifying Employee Payroll Data
    - Creating a Client Record
  - NonFunctional Capabilities
    - Improve Response Time
    - Migrate legacy code to .NET
    - Move from DB2 to Oracle
    - Clean up interfaces to conform to Corporate Standard xxx
- They must be decomposed to do work on them…

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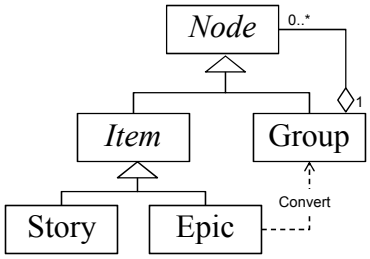
So, Groups Solve our Epics Problem

- A Group is a collection of Items (and sub-groups)
- Epics need to be decomposed to (right-sized) stories (and possibly sub-epics)
- There you go, problem solved
  - Convert an Epic to a Group
  - Use the Groups construct to document the epic and the stories within it



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One gotcha, though

- Only the stories *within* the Epic are actually in the prioritized backlog
  - Epic no longer a Story that is on the prioritized Backlog
  - The Epics themselves only live in the "groups" view
- Is this a good thing? Or a bad thing? Discuss on next slide…

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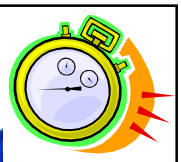
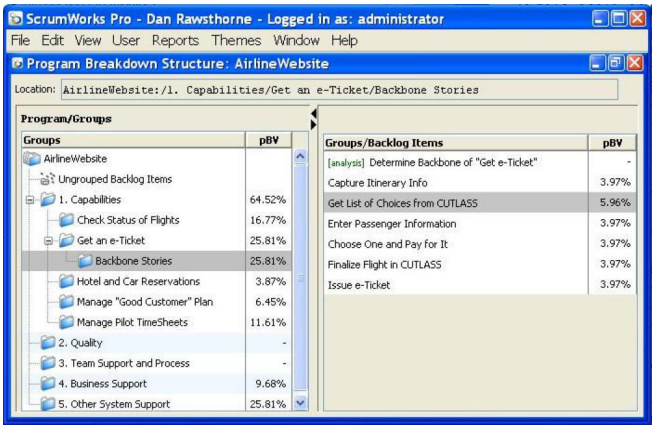
Epics documented as Groups





- How do you think this would work out for you?

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Business Value

- It is the Product Owner's job to maximize ROI; that is, to maximize the Business Value of the product that is delivered every release
- Business Value is defined and/or calculated in many different ways, and I'll introduce one here that can be used when we have this Groups thing going on…
  - See "Rawsthorne: Calculating Earned Business Value for an Agile Project, AgileJournal.com, June, 2006" for more details
  - Or, see the page "http://danube.com/whitepaper/calculating-ebv" for a prettier version (for registered users)

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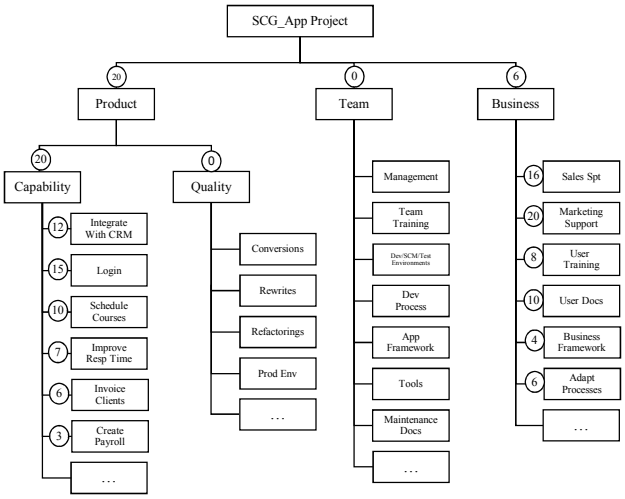
We Could Have Something Like This…



BV(login) = (20/26)x(20/20)x(15/53) = 22%

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BV(story) comes next

- Now weight the stories within the Capabilities
  - Login (capability)
    - Story: "Basic Login/Password" (wt: 20)
      - ❑ UI mockup validated with Sam
      - ❑ Middle-tier code review
      - ❑ Functional tests validated with Sue
      - ❑ Integrate Login Module pieces
      - ❑ Unit Tests validated with Tom
      - ❑ Functional tests passed
    - Story: "3 strikes and You're Out" (wt: 5)
    - Story: "Different password for different permissions" (wt: 1)

Our Doneness Criteria for this story

- So, BV of "Basic Login/Password" is

= (20/26)x(20/20)x(15/53)x(20/26) = 17%

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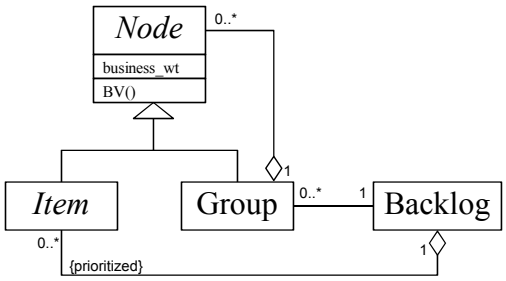
And, here's the model…



$$BV(node) = BV(parentNode)\left[\frac{wt(node)}{wt(node) + \sum_{sibling_nodes} wt(sibling)}\right]$$

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Earned Business Value (EBV)

- Earned Business Value (EBV) is defined as "the percentage of the known business value that is coded up and running", and is calculated by simply adding up the percentages of the stories that are completed

$$EBV(Project) = \sum_{completed} BV(Story)$$

- And this total percentage is what I graph at the end of each Sprint on the next page

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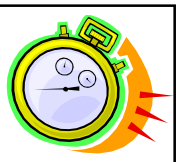
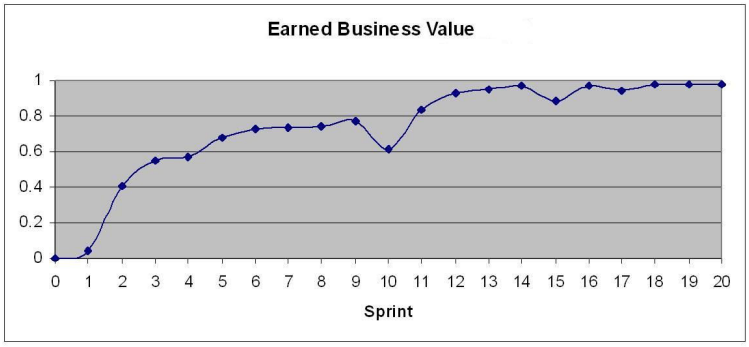
Earned Business Value



- Let's talk about this graph. What is it telling us?



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Dependencies

- One of the questions I get all the time is "how can I show dependencies in my backlog"
- Good question, but
  - I *don't* want to reinvent a CPM network (like MS Project)
  - But I *do* want to be reminded of what things are dependent on each other
  - And I want my team to be forced to think about the dependencies – I don't want the tool to allow them to be stupid…
    - This last point is highly contentious
    - But this is *my* talk…

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So…

- I like to add "dependency tags" to my stories to signify that they are connected.
- Example:
  - Say that I have a couple of windows that both need the same kind of widget, call it the "XYZ Widget"
  - So I make a Tag named "XYZ Widget", and I attach this tag to all the stories/epics that are involved
  - I can then filter on this tag to see all the involved stories, and have good conversations about them
  - See the next page…
- How do you manage dependencies?
- 5 Minutes

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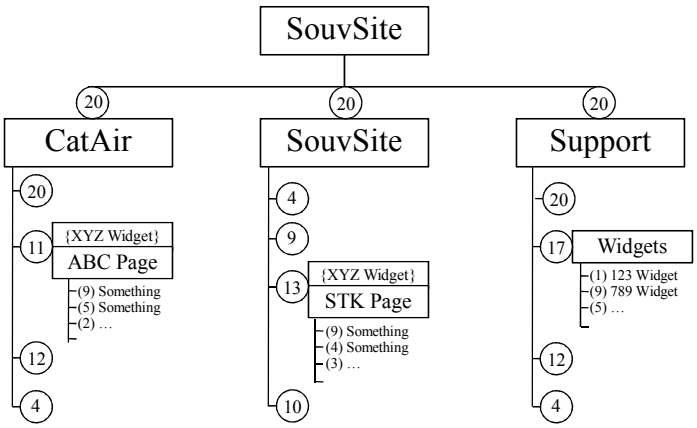
IT Looks Something Like This



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This is a very "Wiki-ish" solution

- The tag would be its own page (XYZ_Widget), for example), where the conversation about the dependency could be described
- Each dependent story/epic has its page tagged with the XYZ_Widget page, so you can go from each page to the discussion
- The XYZ_Widget page can automatically aggregate all the pages that are labeled with XYZ_Widget, so the dependency is complete

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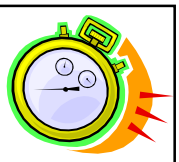
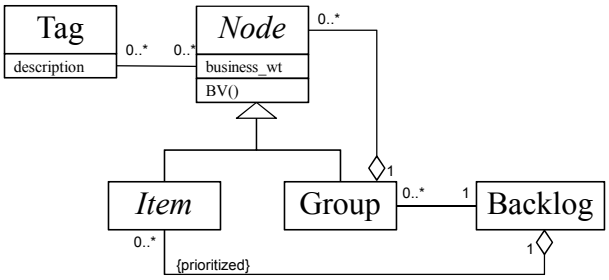
So, now our model looks like…





- Does this work for you for Dependencies?
- What else could Tags be used for?
- 5 minutes

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A Different Kind of Dependency

- Another question I get a lot is "I have a story that provides value in lots of different places in my feature list. How do I handle this?"
- Example:
  - The Support team is building the XYZ_Widget, which
  - Provides BV to the CatAir Team's ABC page, and
  - Provides BV to the SouvSite Team's STK page
- I want the BV of the "XYZ_Widget" story to be the sum of the BVs that it would receive in the two places (as well as its home base). How do I do that?

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Good Question…

- It involves something I call "Ghosts" which are stories/epics that show up in more than one place in the hierarchy. They have only one "home", but multiple clones
- Each of the clones has its own business weight corresponding to its place in the hierarchy
- The node itself has a Total_BV that is the sum of all the BVs of the original and its clones
  - This is not as easy as it looks in theory
  - But could be quite simple in practice
    - I've implemented this with Excel
    - I don't know of any tools that support it, though…

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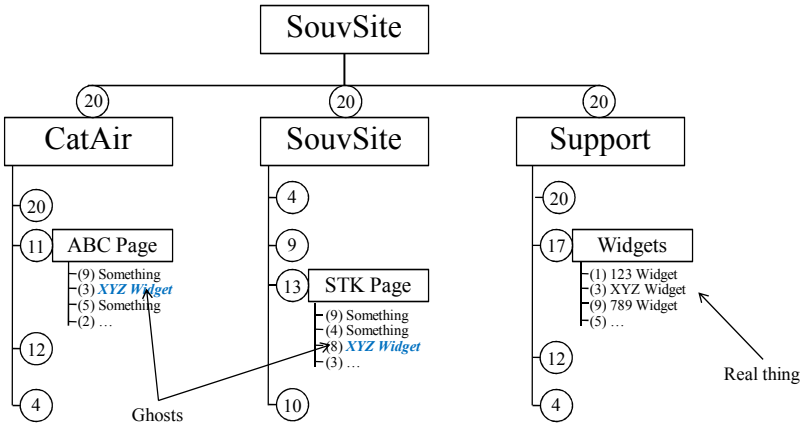
Here's what it "would" look like



$$\text{Tot_BV(XYZ Widget)} = (20/60)(11/47)(3/19) + (20/60)(13/36)(8/24) + (20/60)(17/53)(3/18)$$
$$= 1.2\% + 4.0\% + 1.7\% = 6.9\%$$

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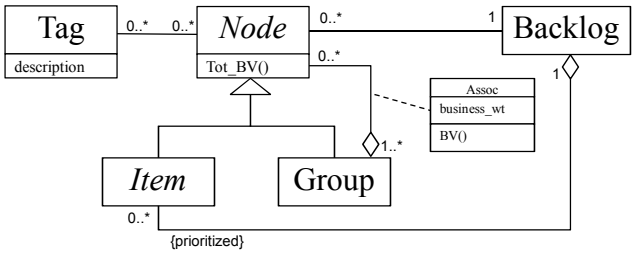
And, here's the model…



- There are a few changes
  - Each *Node* can be assigned to a backlog, not just Groups
  - The BV stuff has been refactored into an association class
  - Have to make sure we don't get loops in the structure
    - This is a tough one
    - Can be handled by having only "bottom" Groups or Stories be ghosted…

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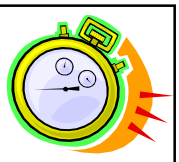
Question…



- What do you think about Dependencies?
- How do you handle this "ghosting" thing?
  - Many teams have this problem
  - What does your team do?

- 5 minutes

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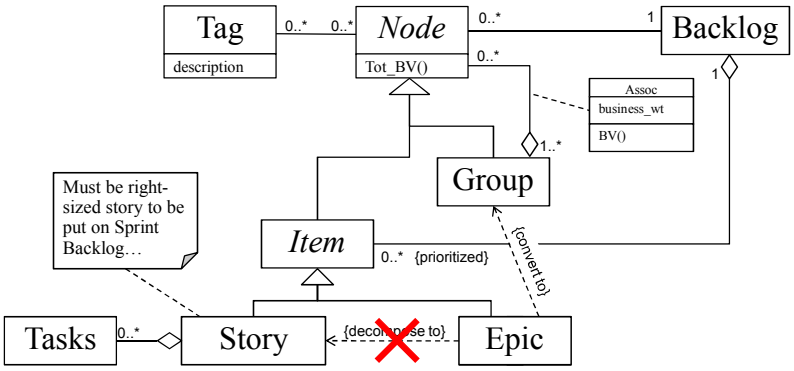
Finally, the Whole Thing

- So, here's the total model of all the stuff we've discussed
- I figure this is complex enough for now, don't you?



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Any Questions?

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