Bucket Estimation

Once upon a time...

Here is Alex. He has a very large IT system that he needs to replace with a new solution. This piece of software is mostly reliable but very, very old. It was built as a mainframe monolith and is more or less built like a rock. It is decades old by now and very few people know how to maintain it. It is difficult to make the changes needed already today, so it will be even harder to break it apart in pieces that can be replaced piece by piece.

It makes Alex head hurt just to think about this.

But Alex has a plan. It took what felt like ages to get the agreement to get this started, but he now has a product owner team and two agile development teams that have started working on building the new next generation software. The plan is to build a new system that will replace the old mainframe. It will be a great system, built on new technology by a great team of good people working in modern ways. The situation looks very promising and people are excited. However, Alex does not really know how much work they have ahead of them.

I mean, Alex knows roughly what the new system will have to do in terms of functionality. But how long will it be before we have the new system with at least a minimum number of features that together are capable of replacing the old mainframe monolith system?

Alex does not know. I mean, well there is a number - we did a pre-study and did some 'from the seat of our pants'-estimates before we got started. Basically a couple of hundred man-hours for each feature title on a list. Not terribly convincing even at the time, but we needed something.

And that was before the team was set up and by people who are not even doing the work now. That feels like ages ago. Alex and everybody else know that those estimates are almost always very very wrong anyway. Alex does not want to waste time on a lot of upfront planning, so he has put this off for now. I want everybody to be focused on the work in front of them and keep work in progress low, he thinks. And progress is being made, so people need to focus on that.

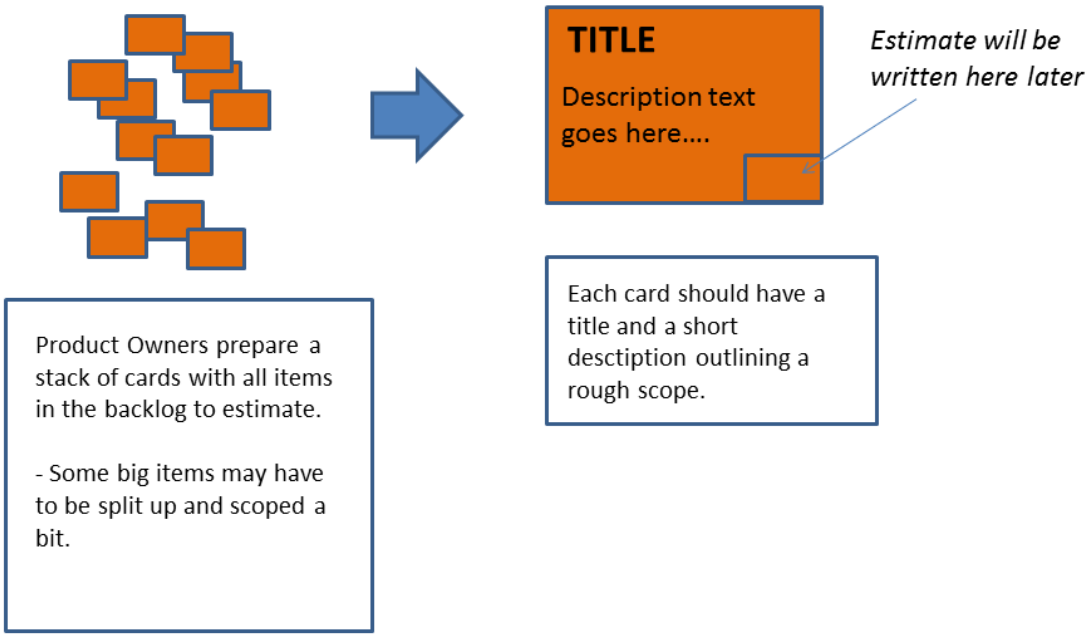
Still, sometimes he feels that bad feeling in his stomach. What if this is not one and a half year of work like we think. What if it is ten years, or ... gasp ... thirty? What will my sponsors and stakeholders say in half a year when we still have little to show, what will happen then?

So, how do we help Alex?
But Alex starts to think about this a bit. He remembers reading an article somewhere.

What if there was a way to estimate all work ahead of us in a way that only requires a limited effort. Something like a bit of preparation and one full work day by all personnel involved with the mission of replacing the old mainframe system.

Here is how we can do it, Alex thinks to himself. He brings his product owner team together and they start planning an estimation workshop.

Large BL Estimation - Preparation

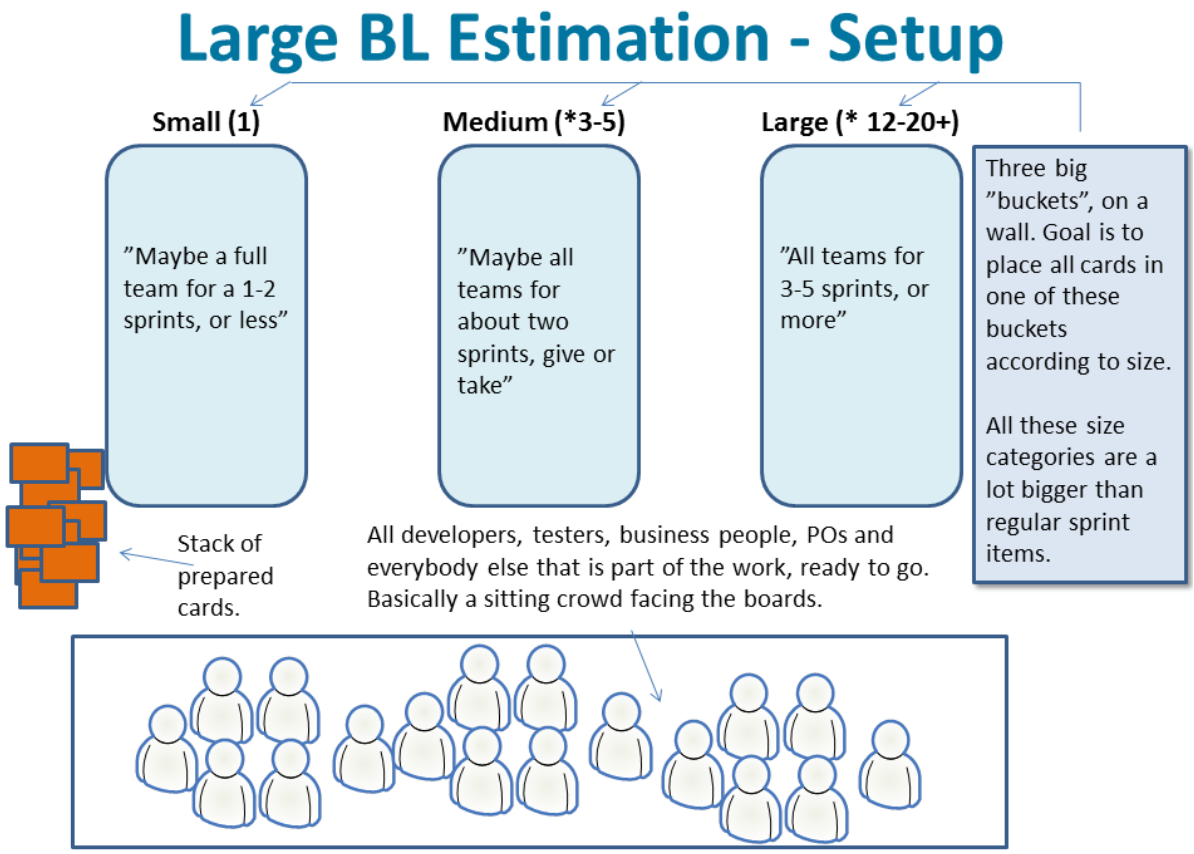


Workshop - Preparations (before estimation day)
Alex and a few members of his product ownership team prepares a card for each large feature or epic that the new software needs to have in order to become viable enough to replace the old monolith system. Most of these cards are a LOT larger than any user story that a team would ever consider working on.

On each card there is a title and two or three sentences that explains what is needed. Each card can be read out loud in 90-120 seconds. One card is selected as the benchmark card and will be placed in the middle bucket at the start of the full day estimation workshop.

Workshop - Stage One
Alex has booked a great location for the workshop. It has a big room that can fit everybody and a few smaller rooms and corners where people can gather for breakout sessions.

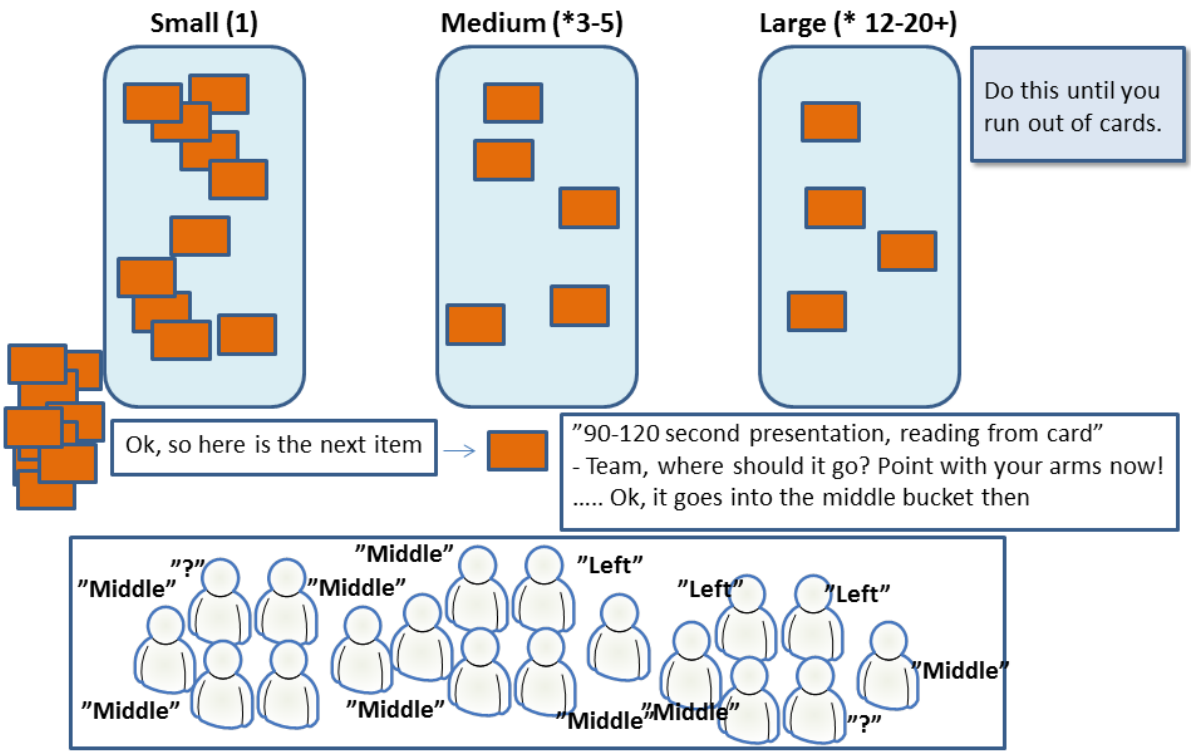
Everybody involved in the work of building the new system are seated physically as an audience in a room facing three “buckets”. There is a small, a medium and a large bucket. It is explained that items that will go in the medium bucket will be several times larger than items that go into the smaller bucket, and so on.



Sam, one of the product owner team members, is up front ready to read each card. She pulls the first card out and reads it out loud. She then puts it in the middle bucket as a reference telling everybody in the audience that this is a medium item and that this is a lot larger than anything that would go in the smaller bucket.

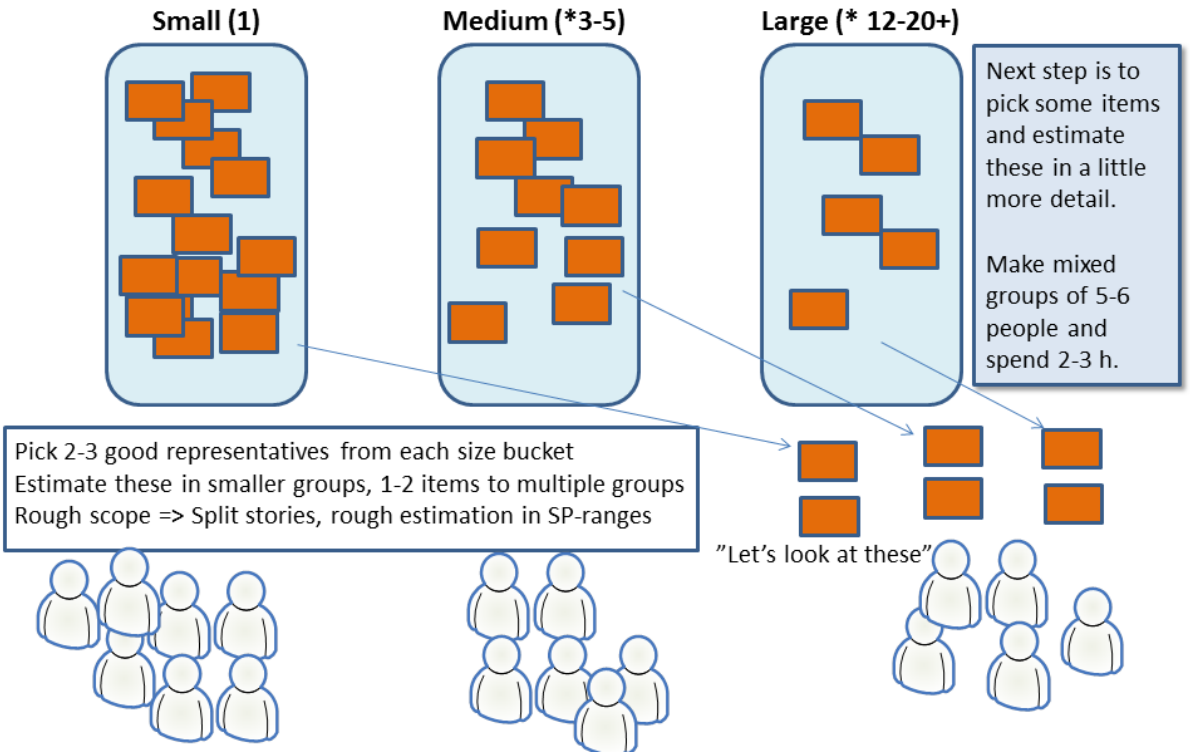
She then pulls the next card out and reads it out loud. Then she asks - “in which bucket does this go, everybody point with your arms now!”. At this point, everybody in the audience points right, left of straight up with their arms. A few who don’t know where to vote just don’t point and look confused. That’s ok. Sam just puts the card in the bucket with most votes and quickly moves on.

Large BL Estimation – Part 1



This is repeated until there are no more cards to read. Since the backlog is large this still takes a long time at which point Sam really needs a coffee break!

Large BL Estimation – Part 2



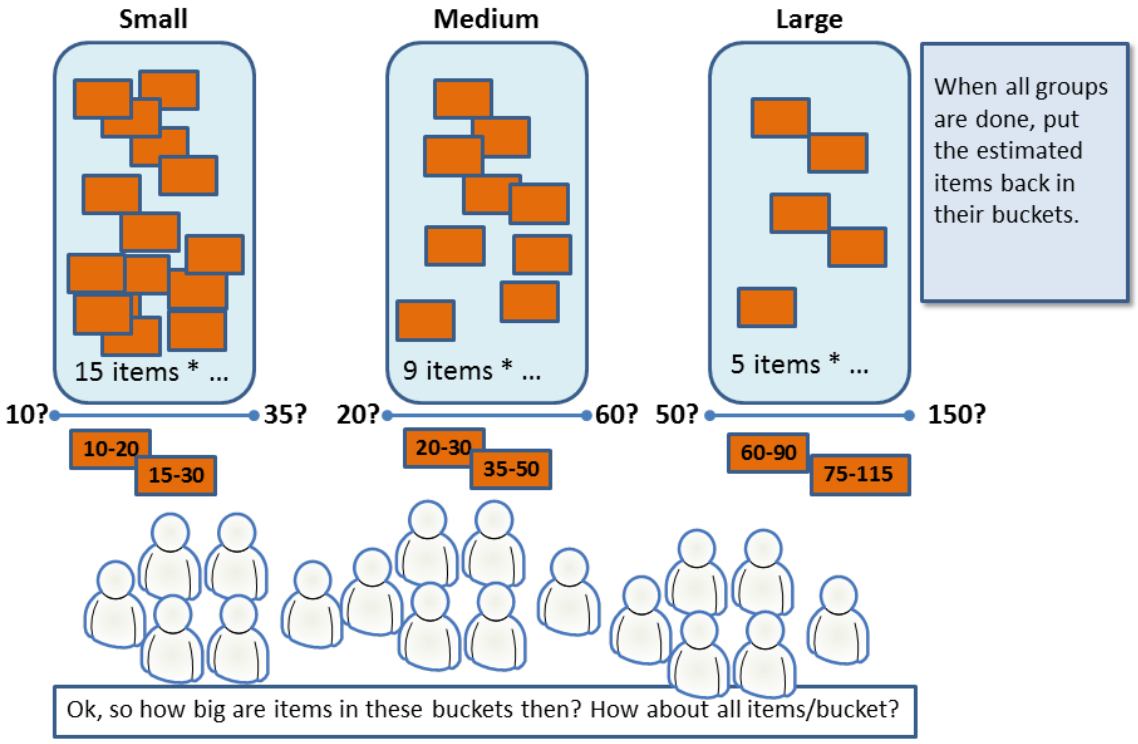
Workshop - Stage Two

All cards have now been placed in a bucket. People cluster around the three buckets and select 2-3 items from each bucket as “good representative” sample items from that bucket. That is, items that most likely are in the right bucket and would therefore make sense to estimate to help estimate the bucket.

People now mix in diverse groups with 5-6 members per group. Each group pulls three of the sample items, then go somewhere to work on these for 2-3 hours. The selected items are broken down into smaller pieces (user stories) and estimated. This is similar to what the teams already know how to do in a backlog grooming session, only it may be done a bit more roughly.

The end outcome is that each card that the group has selected has a low to high estimate written on it expressed in story points, or whatever unit of estimation that the team already is used to using.

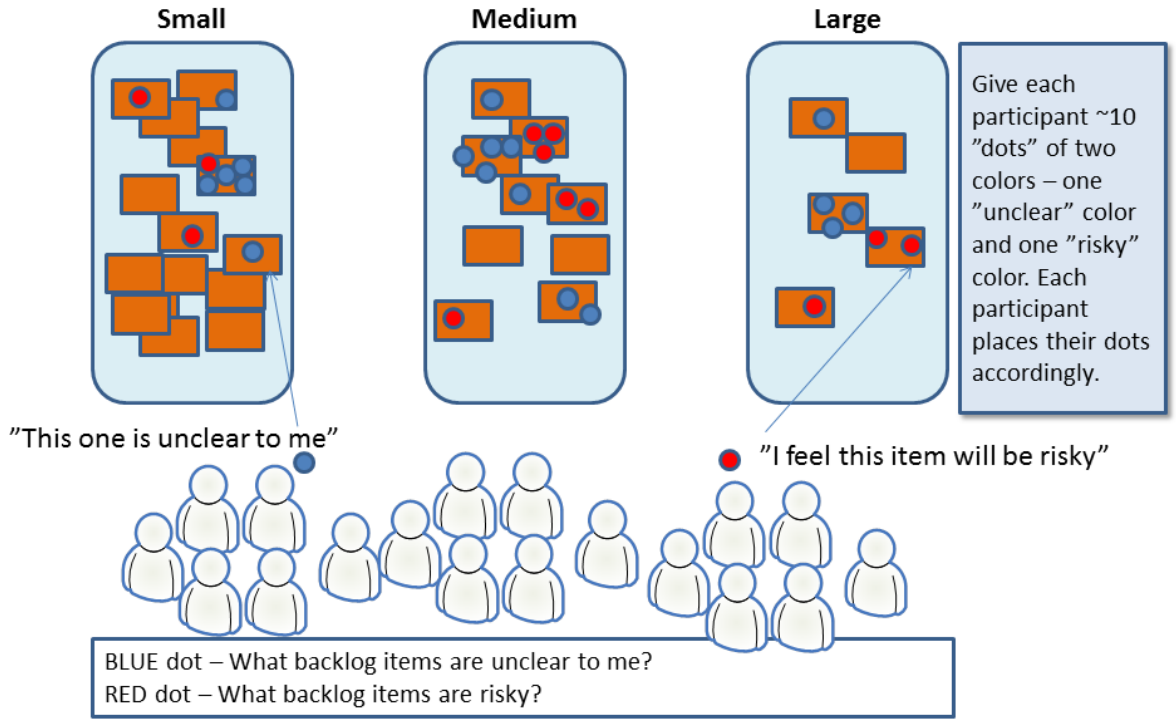
Large BL Estimation – Part 3



Workshop - Stage Three
All groups gather again and put the cards back in the buckets they belonged to. But this time the cards have a low to high estimate value written on them. It turns out that some groups got the same card, and these have extra fun comparing their estimates.

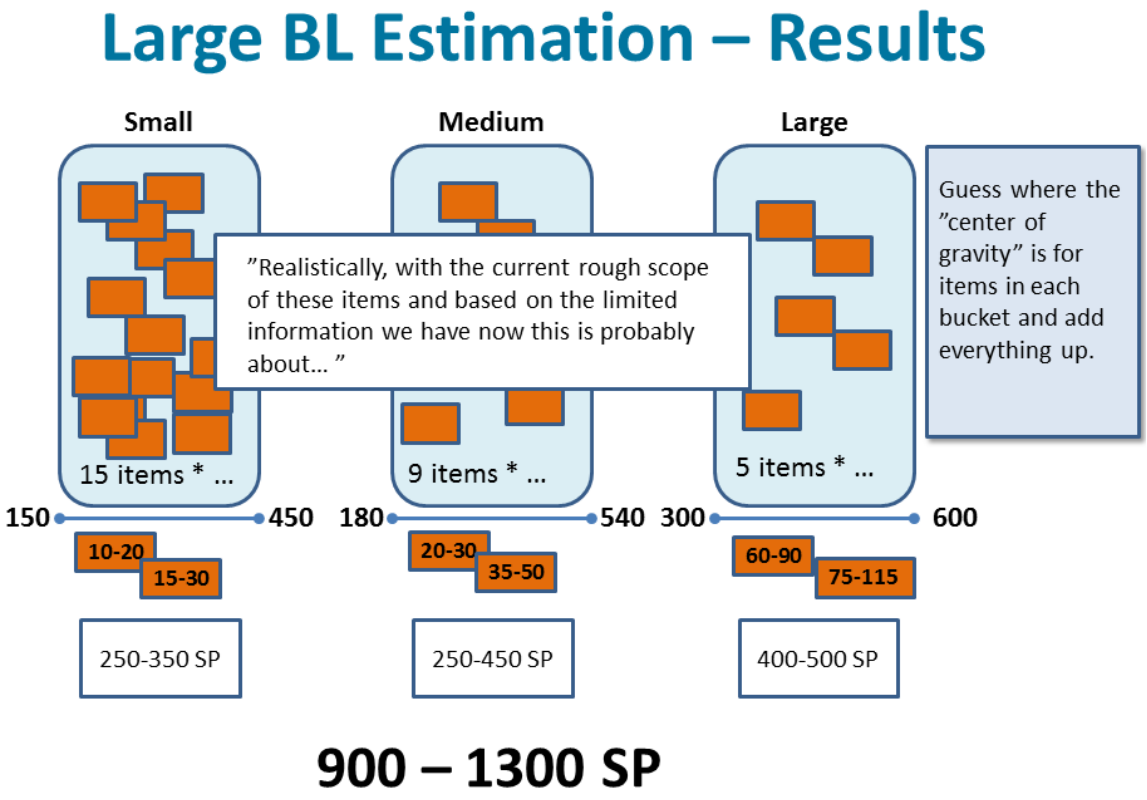
People start speculating on how much all items in each bucket will add up to, but that work is not to be completed now. The buckets will be added up later in post processing by the product owner team.

Large BL Estimation – Part 4



Workshop - Stage Four
Since we already have everybody here Alex feels it would be great to get some input on what parts of the large backlog is most worthy of more work from the product owner team. So for that, everybody present gets a set of colored dot stickies - today the colors are red and blue. Anybody with stickies can place them on any card in any bucket. A red sticky means that ‘I find this item risky’. A blue sticky means ‘I am confused by or have no idea what this item is’.

After all stickies have been placed everybody share some cake and celebrate that the estimation day is over!



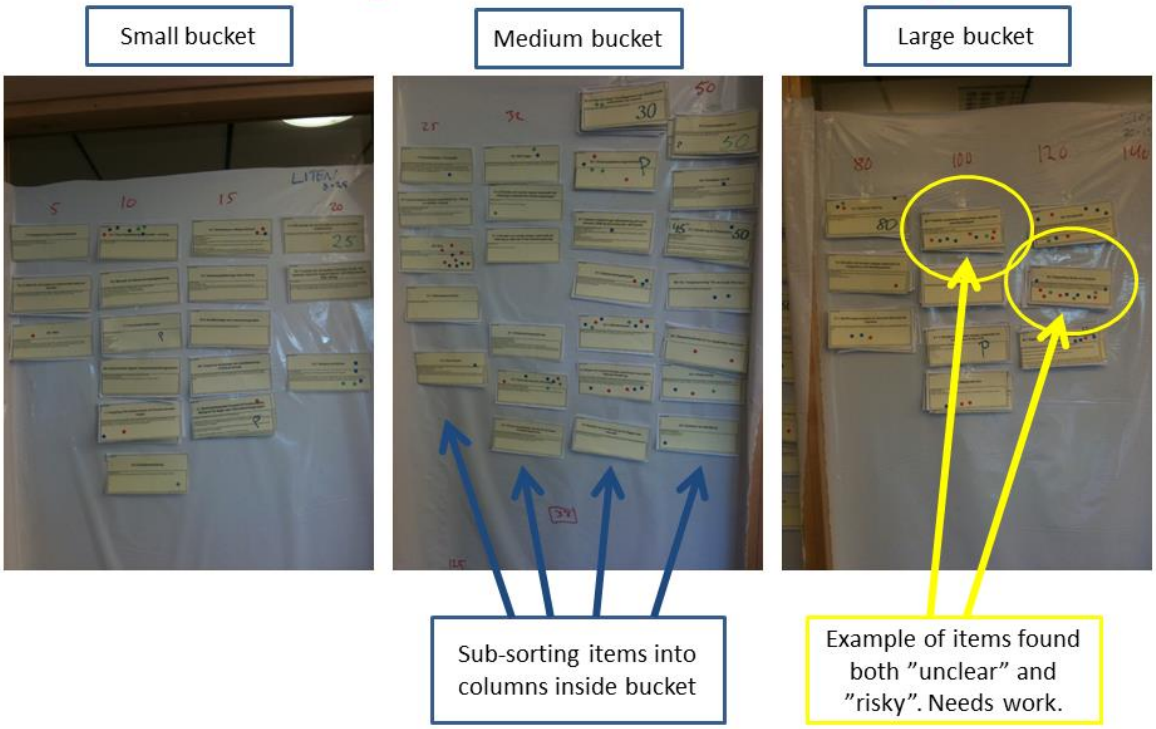
Workshop - Post Processing
The product owner team meets the next day. Each bucket contains sample items with a low and high estimate on them. The team uses these samples to guess where the lower and higher end of the average item in each bucket likely is. These two numbers are multiplied by the number of items in the respective bucket. This is the estimate of all items in the bucket. Add up all items and viola, the large backlog now has an estimate low to high number.

Epilogue
The product owner team decides that having this workshop was really helpful. They now have a rough estimation of every item in the backlog and they also know what items need more work. This will help them prioritize both the backlog and what backlog items they will put work into the coming weeks.

Alex is happy. Even though the total backlog estimate was a scary high one, at least we now have an estimate that is not just a blind guess. He has some ideas about how he will manage expectations.

Since the workshop was so helpful he and the product owner team decide that they want to have this workshop again in a couple of months, after more features have been delivered and after more backlog items have been clarified and the backlog has matured. In fact, we may even make this into a regular standard estimation workshop, he thinks to himself.

Example Post Processing



Example Outcome

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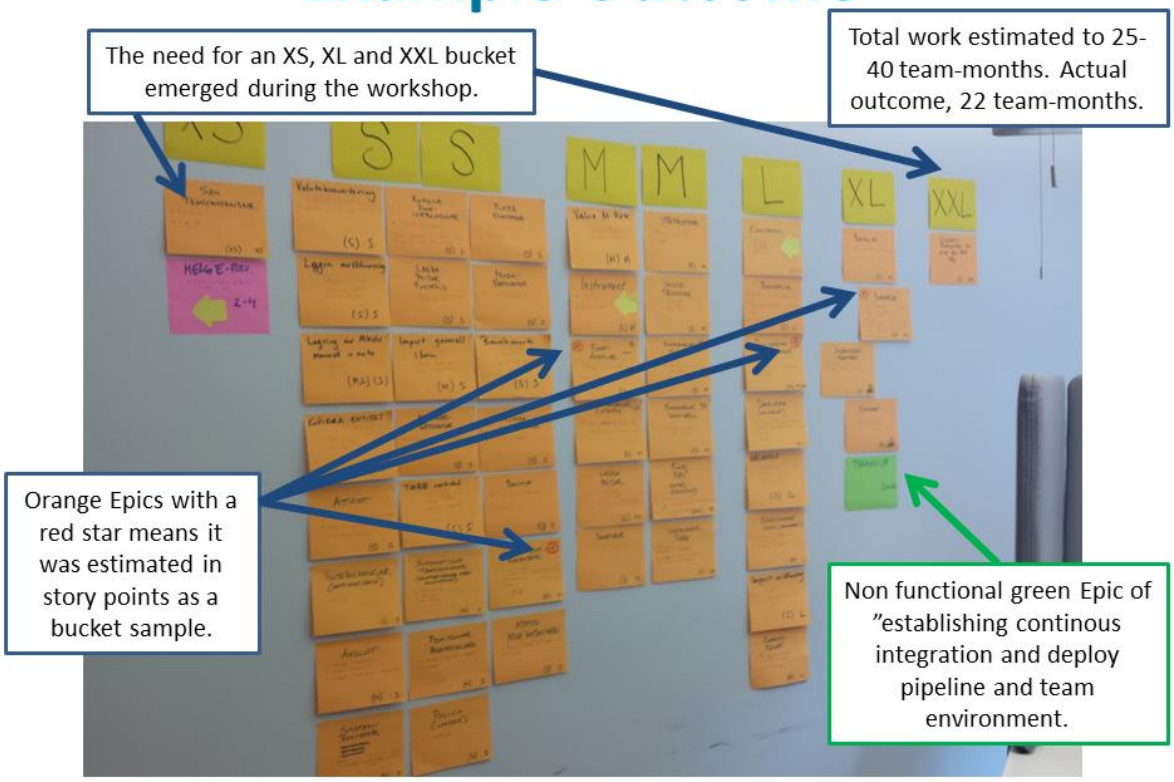

Burndown Forecast - Graph