The Black Art of Valuing Stories Demystified

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Why is valuation so damn hard?

Let's try a quick experiment...

Much better
Please stack-rank these items based on your estimate of their value. Most valuable on top!

Scavenged cardboard

Golf Ball

Garage Sale Bowl

Ball of String

Can of Soup
What was your most valuable item?

Why was it most valuable to you?
No way!

Artist: Robert Rauschenberg

Title: Small Turtle Bowl

Value: $1,000,000 - $3,000,000 (Estimate by The Gagosian Gallery, New York)

Description: Cardboard, 1971, 94 1/2 x 145 in.

Owned by: Robert Rauschenberg Foundation.
So just why is valuation so hard?

- There are many different dimensions of value
- Each dimension has a distinct stakeholder set
- Value dimensions are weighted differently
- Value dimensions are dependent on one another
- Value in each dimension is a function of time
Value varies with time?
Now I’ve got a headache!
What kind of problem is this?

complicated!

complex!
An automobile engine is complicated!

It sure is!

Let's define terms

Complicated: An ordered system in which a future state can be predicted by a understanding the relationship of all parts.
complex: A system that cannot be deterministically understood by understanding the relationships between all the parts.

and financial markets are complex!

I get it! Valuing software is a complex problem!
Learning is emergent

To solve complex problems we must:

Probe:
Sense:
Respond:

Design and execute tests
Observe how the system responds
Act based on our new understanding
Minimize the TOTAL time through the loop

Cynefin looks a lot like "The Lean Startup"

Yes it does. Eric Ries used these techniques to value products

Build = Probe  Measure = Sense  Learn = Respond
Use mind-mapping to identify important stakeholders

I get it, I can use those stakeholders to help me establish value
The Secret Sauce of valuation is to repeat the “develop” and “assess” cycle as fast as possible.

I’ll give it a shot!
Enough theory. Let's look at tools to value software.

Finally!
Buckets?

Value Buckets are fast and easy!

They are especially useful very early in the development cycle.
In “Affinity Grouping”, the collaborative group agrees on value buckets. This is often accurate enough.
In "The Kano Satisfaction Model", stakeholders value software features from the buyer’s perspective. Wasn’t Kano the Green Hornet’s sidekick?
Stakeholders classify features based upon need!

“MoSCow” rules!
Groups features into four market perspectives!

"Purpose Alignment!"

- Partner
- Differentiating
- Who Cares
- Parity
We can get a more accurate valuation if we prioritize features!

Easy as 1, 2, 3
I want my food to cook evenly throughout.
I want to cook my food quickly.
I want to cook for a fixed period of time.
I want notification when cooking is completed.
I want shortcuts to cook common items.

Gathering stakeholders and simply “Ranking” features is fast and informative.

Cooking food thoroughly is the most important thing to me.
Sure. open the envelope and take out the card decks marked Valuation Exercise #1.

In groups of five, rank the cards by value top to bottom.

MoneyMan is a home financial management product. Try to get everyone to agree on the ranking
I want my food to cook evenly throughout.

I want notification when cooking is completed.

I want to cook for a fixed period of time.
Now let's look at ways to assign specific values!

These techniques improve decision-making in the last stages before feature development begins.

You mean ... This feature is $\pi \approx 3.141592654\%$ more valuable than that one?
Enterprise Value Model

Strategic Objective
i.e. Profitability

Biz Capability i.e.
Growth
Value Component
New Markets
Weight: 1

Biz Capability i.e.
New Product
Value Component
Market Share
Weight: 2

Biz Capability i.e.
Talent Development
Value Component
Increase Revenue
Weight: 6

Value Component
Increase Capacity
Weight: 4

\[ 1 + 6 + 4 = 11 \]

Value Score for a releasable feature or epic

"Enterprise Value Model" aligns value to corporate strategy.

Thanks to Pat Reed!
Epic 1 – Construct the recommendation engine service for “Ringer”. The team improved their Definition of Done to include 70% unit test coverage, 100% of regression tests passing, and no Sev 1, 2 or 3 errors in product. Score 11

Epic 2 – A technical story to reduce existing technical debt by 20%. Score 3

Epic 3 – Construct a web service that offers a customer a 10% reduction of subscription fee when a referral becomes a new customer. Same Def of Done standards apply. Score 8
“Planning Poker” is a collaborative card game that can assign values to features!
1) Put units of value on the wall 
2) Then ask the whole team to value stories one by one

"The Team Estimation Game" is a more specific version of the 20/20 Vision Innovation Game!
1) Size the stories by effort
2) Assign price as a percentage of development budget.
3) Players are given a fixed amount of play money.
4) Players then negotiate to purchase features.
5) Learn the value of features by listening to negotiations.

"Buy A Feature " is another fun Innovation Game to value software.

Let's play!

<table>
<thead>
<tr>
<th></th>
<th>Player 1</th>
<th>Player 2</th>
<th>Player 3</th>
<th>Player 4</th>
<th>Player 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feature 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feature 3</td>
<td></td>
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<tr>
<td>Feature 4</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Feature 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Analyze**

- Who purchased what?
- How much did they buy?
- Who negotiated with whom?
- What did they say?
- How did they shape the features?
1) Players given a fixed number of dots or points
2) Players allocate dots or points across choices

These two techniques sum group opinion

"Dot Voting"  "Value Scoring"

Fun!
“Thirty-five” is a valuing game where a room of people respectively pair off and allocate seven points between two stories. Done five times, story value can sum from 0 to 35 points. This and many other great games can be found at tastycupcakes.org.
Determine Benefit to Cost

• Use any specific valuation technique to determine value points (VP)

• Use any specific valuation technique to determine story (effort) points (SP)

• Return on Investment $\approx \frac{VP}{SP}$
The “Weighted Shortest Job First” comes from Donald Reinertsen and “Lean Economic Theory”.

My head is hurting again!

Weighted Shortest Job First = Cost of Delay / Work Duration

Let's do another exercise then. Using Valuation Exercise #2 in your folder, calculate the ROI Indicator and the Weighted Shortest Job First. How would each method change feature rankings? Discuss at your table.
Real options

Net Present Value

Rate of Return

With budgets as a proxy for value, you can use "capital budgeting techniques" to quantify dollar value!

Now my head is really exploding. Enough!
**Parent Story** is valued at 40 value points

<table>
<thead>
<tr>
<th>Parent Story’s Children</th>
<th>Story Points (SP)</th>
<th>% of Total (SP/38)</th>
<th>Value Points (40*%Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child 1</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child 2</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child 3</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For example:  
Child 1 Value = 40 * 20/38 = 21

Just one more tip.  
When breaking up stories, assign child values as a percentage of effort!

This is a meeting saver!  
I don’t have to re-estimate values when I split stories!
Questions?
APPENDIX
SEE ALSO

- Robert Rauschenberg
  [http://www.rauschenbergfoundation.org](http://www.rauschenbergfoundation.org)

- The Cynefin Framework
  [http://www.youtube.com/watch?v=N7oz366X0-8](http://www.youtube.com/watch?v=N7oz366X0-8)

- The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses
SEE ALSO

Value Buckets

• Affinity Grouping

• Kano Satisfaction Model

• MoSCoW Rules

• Purpose Alignment

Value Prioritization

• Value Ranking

• Relative Prioritization

• Innovation Games: 20-20 Vision
SEE ALSO

Specific Valuation

• Planning Poker  
  http://www.mountaingoatsoftware.com/agile/planning-poker

• Dot Voting  

• Innovation Games: Buy A Feature  
  http://innovationgames.com/buy-a-feature/

• Weighted Shortest Job First  
  http://www.scaledagileframework.com/wsjf/
  http://www.rallydev.com/community/agile/using-economics-prioritize-your-backlog

• Thirty Five  
  http://tastycupcakes.org/2012/10/thirty-five/

• Capital Budgeting Techniques  
  Real Options: http://en.wikipedia.org/wiki/Real_options_valuation  
  Rate of Return: http://en.wikipedia.org/wiki/Rate_of_return
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