Calculating Business Value
Unlocking Your Value Delivery Potential

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Alex Brown is the Chief Operating Officer of Scrum Inc. He has deep experience in Agile/Lean management techniques and business strategy. Alex has expertise in helping executive leadership and working teams collaborate effectively through common goals and metrics. He is actively involved in adapting the Scrum methodology beyond its traditional home in software development into other creative team environments, and has a particular interest in pushing the envelope in financial and progress reporting in a Scrum context.

Prior to joining Scrum Inc. Alex was a Principal at The Boston Consulting Group, where he led more than twenty projects to improve competitive positioning and transform fortune 100 companies to leaner and more agile operations. His project experience includes cases in the retail/consumer, IT manufacturing, healthcare, finance, and government sectors.
Agenda

- What do we mean by business value
  - Sources of business value
  - Different ways to measure business value

- How Scrum Inc. addresses business value
  - Tiered work streams
  - Our cadence and approach
  - NPV per point as a unifying metric

- Deep dive into NPV/point analysis
  - Examples for different Epic types

- Get hands-on experience with a quantitative approach
What Is Business Value?

Business Value results from the intersection of three dimensions
1. What you can implement successfully and sustainably
2. What your customers want and will buy (even if they don’t know it yet)
3. What your team is excited about creating

Should be an explicit consideration of the organization
- Estimate at Epic rather than User Story level
  - What is the source of value that will be created?
  - How much effort will it take to create that value?
- Prioritize Epics by ROI (most value with the least effort)
- Coordinate with your Finance Department
  - They already have a view of production function and ROI metrics
  - Engage them as an ally – they will love that you are speaking with them
Sources of Business Value

Market Value
Will this feature allow us to:
• Sell more units?
• Charge a higher price?
• Reduce the cost of providing the product/service?

Risk Reduction
How will completing this story allow us to:
• Develop or refine hypotheses about the market?
• Prove technical assumptions?

Capability Building
Will completing this story:
• Enable our team to do something we couldn’t before?
• Reduce or eliminate the need for low-value activity?
Not All Features Are Created Equal!

- 80% of value typically resides in 20% of features.

- 65% of features provide little to no value, are rarely used and/or aren’t actually desired by the customer.

- The rest are OK, but not as important.

How can you tell ahead of time which features add value and which don’t?
Prioritizing Features Effectively Can Deliver Radically More Business Value
Methods for Determining Value

- **Bubble Sort**
  - Start at the top of a list of stories
  - Compare value of stories one at a time
  - Move the lower value story down one place in list
  - Repeat until all stories have been compared

- **Planning Poker**
  - Pick a low value item and assign it 3 points
  - Use estimation cards to independently estimate a story
  - Show estimates, discuss highs and lows, estimate again
  - When everyone is within three cards, average the estimates

- **Break-even analysis**
  - Compare cost of feature creation with expected incremental revenue of feature
  - How many incremental units would we need to sell to equal the development cost?

- **Cost of Delay**
  - Estimate in a lightweight way the opportunity cost of NOT completing a feature
  - Often divided by feature size to get a “proxy” for ROI

- **Return On Investment**
  - = \( \frac{\text{Total expected revenue from new feature}}{\text{total cost to develop feature}} - 1 \)
  - Expressed as a percent

- **Cash Flow Analysis**
  - Over a reasonable planning horizon, what are the revenues and expenses associated for a feature in each month?
  - What is the net effect on cash flow over that horizon?

- **Net Present Value**
  - Building on the cash flow analysis, what is the effect of including the “time value of money” in the calculation? (i.e. a dollar today is worth more than a dollar tomorrow)
Exercise: Scrum Café

• You and your team recently opened a local restaurant. It has:
  • A small kitchen with sink, fridge and range-top
  • 5 café-style tables

• You have been serving soup and sandwiches at lunch, have attracted a small but loyal following, and are just breaking even with weekly revenue of $5,000.

• Since you use Scrum to run your restaurant, you know that team velocity is 100 points for each week-long sprint

• You have found a bank that will give you a loan at an interest rate of 7%, but they will want a compelling argument for how you plan to use the money

What should you do to grow your business?
Exercise: Scrum Café 1

• Your team has suggested five potential enhancements:
  1. Get a liquor license and start serving alcohol
  2. Add ten tables of outdoor seating
  3. Stay open for dinner as well as lunch
  4. Advertise in the local paper or online
  5. Install a high capacity espresso machine

• You have also spoken with customers enough to develop a “customer persona” for your typical customer

Part I. Five-Minute Time Box

1. Using a “bubble sort” or “planning poker” approach, which of these improvements would you complete, and in what order?
Four Pillars to Scrum Inc.’s Business Value Process

1. Tiering Activity by Category
2. Regular Quarterly Cadence
3. NPV/point for each Epic
4. Prioritization of Epics
Scrum Inc. Activities Tiered into Parallel Workflows

Growth and innovation activities

Value and revenue creation activities

Keeping the Lights On (KLO)

New knowledge creation

Efficiency improvements

Online content  Micro-classes
Coaching  Publishing  Consulting
CSM class  CSPO class  Mgmt. workshops

IT, communications, and web
Invoicing  Expense processing  Proposal response
Business Value Vision Updated on a Regular Cadence

Multiple parallel planning, review, and retrospective cadences

**Yearly**
- Strategic goals
- Financial estimates

**Quarterly**
- Epic definition/prioritization
- Release planning
- Financial Forecasts and goals

**Monthly**
- Actual financial performance
- Epic progress check-in

**Each Sprint**
- User story planning
- Backlog refinement
- Sprint goals
Business Value Calculation Anchored to the “Production Function”

- Production Function describes the mechanics by which organization accomplishes its mission.
- NPV/point calculations should link to variables in the Production Function.
- Agreeing on the Production function helps align the product vision.

Some Examples:

1. \[ \text{Profit} = \text{Units Sold} \times (\text{Price/Unit} - \text{Cost/Unit}) - \text{Fixed Cost} \]
2. \[ \text{Profit} = \text{Monthly Users} \times \text{Member Fee} - \text{Fixed Cost} \]
3. \[ \text{Impact} = \text{People Impacted} \times \text{Magnitude of Impact} \]
Cash Flow Profile for a Typical Epic

Cumulative Cash Flow ($)

- Maximum Required Investment
- Cash flow break even point
- Point of Positive Return on Investment
- Investment period
- Return period
Calculating Net Present Value

\[ \sum_{t=0}^{N} \frac{C_t}{(1+r)^t} \]

Where
- \( C_t \) is the net cash flow in time period \( t \)
- \( r \) is the discount rate
- \( t \) is the time period
- \( N \) is the total number of time periods considered

**Illustrative Example:**
- \( C_0 = -50 \)
- \( C_4 = -30 \)
- \( C_6 = 45 \)
- \( C_{10} = 100 \)

\( r \) is 5%

\[ \text{NPV} = \text{Cash Flow} \times \text{Time (t)} \]

\[ \text{NPV} = -50 \times 5 + 34 \times 6 + 61 \times 10 = 61.40 \]
NPV/Point Drives Better Decision Making

One metric to encapsulate return on investment

1. Calculate Epic NPV
2. Can also include “intangible” benefits
   • Use Planning Poker to estimate business value relative to reference activity with known cash flows
3. Estimate story points to complete Epic
4. Divide total NPV by estimate of points
   • Answers: How can we get most return with least effort?

Focuses team on optimizing returns

• Eliminates most internal power politics
• Encourage teams to think in business case terms
• Highlights key assumptions and variables to confirm
• Supports after-action review to improve accuracy
• Improves ability to forecast financial results
Prioritize Candidate Epics by NPV/Point
Minimum level set by current Rev/point run rate

Available quarterly team capacity for Epics
(based on yesterday’s weather)
Scrum Inc. Case Study: Setup

Publish a book

- New revenue opportunity
- $400,000 advance, paid at key milestones
  - 25% at contract signing
  - 50% at draft delivery (+12 mo.)
  - 25% at publication (+9 mo.)
- Estimate $5,000 in travel and research expenses
- Estimate intangible benefit of brand building at 2x reference story (reference worth $30,000)
- Estimate 1,500 points of effort to research, write and edit

Install videoconference system

- Performance improvement
- No additional revenues
- $5,000 in up-front expense
- Team estimates closer team integration will increase velocity by approx. 2%
  - Current velocity is 200pts/sprint
  - Current revenue “run rate” is $250/pt
- Estimate 25 points of effort to research, purchase and install
- Assume system will need replacement in 3 years

Which project should we do first? Should we do them both?
Case Study: Calculate NPV/Point

Publish a book

NPV = $358K

$100K + $200K - $500 = $358K

1,500 story points

Research (300pts)
Writing (100pts/chapter x10)
Editing (200pts)

$279/point

Install videoconference system

NPV = $57K

-$5,000 + 2,000 = $57K

25 story points

Research (10pts)
Purchase (5pts)
Install (10pts)

$2,279/point

$60K of intangibles

$0 intangibles

VS.

$0 intangibles

$279/point

$2,729/point
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Part II. Three Five-Minute Sprints

1. Now discuss each investment option in quantitative terms
   • How does it create value?
   • What assumptions are you making in your value discussion?
   • How could you verify those assumptions through early tests?
   • What is the estimated NPV/point?

2. Based on your NPV/Point estimates, in which you would implement the new features? Would you implement them all?

3. Did the implementation order change as a result of greater discussion?
Conclusion

• We spend lots of time in Scrum talking about maximizing business value...

• ...But most companies still use very qualitative processes to estimate business value
  • Creates unresolved arguments about one pet project versus another

• Using a more quantitative lens makes business value explicit, and is well worth added effort
  • Allows explicit comparison of feature vs. tech debt
  • Enables explicit consideration of risk
  • Done quarterly at the Epic level, not for every story and sprint
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