How *Better, Faster, Cheaper* Happens

The Economics of Enterprise Agility

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“Save your breath. I’ve heard it all before. I’ve seen you people come, and I’ve seen you go. I can wait you out.”

— Skeptical (but honest) Mid-level Manager

Agile-Lean Transformations struggle for many reasons. Poorly managed motivations & expectations are the most common.
We need a new story to tell.

A story that isn’t about Technology. It is about Business and Management.

A story that doesn’t presume that Agility is the Answer. It explores the Problem.
Once upon a time, Traditional Development seemed to work.
Risk does not grow linearly.

Unresolved Risks interact with one another multiplying geometrically until you drive them out!

Traditional Risk Management controls risks but doesn’t eliminate them until the project’s end.

Agile Risk Management regularly eliminates Risk and, hence, reduces cumulative risk by trading one big curve for a series of much smaller ones.

Verification means that a solution satisfies its spec.

Validation means that a solution satisfies its need.
If you don’t seek Feedback and Learn from it, Waste only grows until it dominates.
Agile methods utilize feedback control and the natural reduction of variance that results from it.

“Act” means act on what you learn, i.e. remove the Waste!
First 3 Principles & Corollaries of Agile Economics:

1. **Iterative closure minimizes Cumulative Risk Exposure.**
   - Drive Risk out early and often. Come to full closure, Verified and Validated.

2. **Risk & Waste are related. Both accumulate unless actively driven out.**
   - Eliminate Waste as soon as it is identified. Accumulate only Value.

3. **Feedback diminishes variance and increases accuracy, iteratively & exponentially.**
   - Factor in Learning iteratively to reduce the gap between what-you-Presume and what-you-Know.

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The Wisdom of Value Stream Optimization

A Value Stream begins and ends with the Customer. Work becomes Value only when it reaches the Customer!

1st, make it Flow!

2nd, make it Flow Efficiently!

THEN, make it Flow Faster!

Productivity cannot be Created! Only Lost and Recovered!

Efficiency = \sum \frac{\text{Time}}{\text{Efficiency}} = 3\% - 70\%

Time-to-Market = \sum \frac{\text{Time}}{\text{Efficiency}} = 3 \text{ mo} - 16 \text{ mo}

Remove the 7 Wastes:
- Phases & Transport
- Distance & Movement
- Over-engineering
- Over-production
- Excess Work-in-Progress
- Waiting for Action
- Defects

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Sequential processes are always the slowest and the least resilient!

In 1 batch of 50 (sequential),
Total $T_{\text{processing}} = 254$ ticks.
Average $T_{\text{idle}} = 203$ ticks.

In batches of 5 (concurrent),
Total $T_{\text{processing}} = 74$ ticks.
Average $T_{\text{idle}} = 14$ ticks.

In batches of 1,
Total $T_{\text{processing}} = 58$ ticks.
Average $T_{\text{idle}} = 4$ ticks.

The Penny Game

Processing Time
-71% $T_{\text{processing}}$
-93% $T_{\text{idle}}$

-22% $T_{\text{processing}}$
-71% $T_{\text{idle}}$

Done = n coins processed thru all 5 stages
Process = $b \cdot (\text{Flip & Record}) + \text{Pass}$
Defect = reprocess whole batch from stage 2

Resilience
Batch of 50: $T_{\text{defect repair}} = 203$
Batch of 5: $T_{\text{defect repair}} = 23$
Batch of 5: $T_{\text{defect repair}} = 9$

-89% -61%
A Lot of Productivity is lost to Uncoordinated Prioritization.

Locally Optimal Decisions are almost always Globally Suboptimal.

-60% Time-to-Market
How do we form Teams?

Overload People?  OR  Overload Teams?

Efficiency of Teams is related to # of Relationships & Communication Distance

\[
\text{Eff Relations} = \frac{\text{R\# immedi}}{\sum (\text{R\#} \times \text{Dist})}
\]

Efficiency of Teams is related also to Context Switches & Communication Distance

\[
\text{Eff Context} = \sum (-10\% \times \text{Dist})
\]

For this reason, people limit their Comm Breadth. BUT, when Comm Breadth is limited too much, Communication and Quality degrade.

Comm Distance is measured in Time.

Self = 0; Immediate = 1; Distant ≥ 2

5x2 = 10
3x2 = 6
2x1 = 2
4x2 = 8

Eff Context

-90% -50%

It is more efficient to assign another backlog to a stable team, if you must, than to give multiple assignments to individuals.

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Next 5 Principles & Corollaries of Agile Economics:

4. **Productivity is never created. It can only be wasted ... and reclaimed.**
   - Productivity \( \leq \) Capacity  Don’t add capacity unless you can effectivity and efficiently use it.

5. **Efficiency of most value streams is very low.**  
   **Delays & Multitasking are the major causes.**
   - Start by ensuring that *something* flows. Fix broken processes. Start small and stay focused.
   - Then, stabilize and regularize flow. Flow-matching processing stages minimizes queuing.
   - Only then, make balanced optimizations. Tune globally to maintain uniform flow.
Next 5 Principles & Corollaries of Agile Economics:

6. **Large batches & sequential processing are wasteful.**
   - Structure work to be closed – verified and validated – in small batches.
   - Promote coordinated concurrency.

7. **Priority (processing order) conflicts are wasteful.**
   - Promote globally coordinated priorities.

8. **Context-switching is waste. Teams context-switch more efficiently than People.**
   - Keep teams stable and assign work (i.e. multiple backlogs) to them. Keep people focused.
Don’t make me Lie to you!!!

Ideally, 1 unit of Time = 1 unit of Value.

9. %-complete & RAG are inherently unreliable!

More Deviation = Less Truth

Less Deviation = Greater Predictability

More Deviation = Less Certainty
10. Quadruple Constraint
You can fix any 2-3 parameters, but the remaining parameters must flex to reach equilibrium.

11. Maximizing Performance
Sport coaches & sergeants know: you get the best from a team by managing their stress.

12. Regular, Sustainable Pace
Traditional project pacing is irregular, exceeding the 6-week motivational horizon. Agile project pacing is regular, achieving as much or (often) more in the same time.
All of these principles apply regardless of methodology!

You don’t have to *do* Agile to *be* Agile ... though it helps. Start by applying these principles, and you will *become* more Agile.
Agility - the ability to change the body's *position* efficiently ... requir[ing] the integration of isolated movement skills using a combination of *balance, coordination, speed, reflexes, strength* and *endurance.*
- Wikipedia

<table>
<thead>
<tr>
<th>Balance</th>
<th>Balance Risk, Value, Stakeholder Interests, Development Effort &amp; Priorities</th>
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</thead>
<tbody>
<tr>
<td>Coordination</td>
<td>Coordinate <em>All</em> of the Parties necessary to bring a Feature to Deployment</td>
</tr>
<tr>
<td>Speed</td>
<td>Speed Time-to-Market for Features</td>
</tr>
<tr>
<td>Reflexes</td>
<td>Respond Quickly and Effectively to Resource Constraints, Priority Conflicts &amp; Dependencies</td>
</tr>
<tr>
<td>Strength</td>
<td>Ensure that Critical Resources are assigned, in time, to the Most Important &amp; Useful Features</td>
</tr>
<tr>
<td>Endurance</td>
<td>Develop Realistic Plans &amp; Sustainable Pace</td>
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</tbody>
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Organizations need a new definition of success.

**NOT** s/he who dies with the most headcount wins.

Instead, s/he who uses resources most efficiently to get product to market wins!

**This is a collaborative game. You cannot win it by yourself !!!**
Thanks!

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