Overload, change, and sustainability

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OR
WHY YOU’RE SOMETIMES TEMPTED TO THINK THE PEOPLE WHO WORK FOR YOU ARE LAZY

&

WHY THEY DON’T THINK SO MUCH OF YOU, EITHER
Outline

- Sustainability: Just another transition?
- Why we get stuck:
  - An introduction to the dynamics of overload & the dangers of firefighting
- Why we stay stuck:
  - The obvious solutions often make things worse
- What can be done
The Schumpeterian Puzzle

- Takeoff
- Ferment
- Maturity
- Discontinuity

Performance vs. Time
Incumbent Replacement: Some Empirical Results

- Many industry level studies suggest that incumbent firms are often replaced by entrants at moments of “discontinuous” innovation:
  - Photolithographic alignment, Ice making, Radial Tires, Scrap steel, Color television, Vacuum tubes, Hard disks, Mini computers, Personal computers….

- This is not always the case:
  - Typesetting equipment, Calculating machines, Pharmaceuticals, Specialty glass, Branded consumer goods…

- But even when incumbents do retain industry leadership they often:
  - Buy entrants (or their technology)
  - Or spend an enormous amount on internal development
Incumbent failure in semiconductor photolithography…

Cumulate share of sales of photolithographic alignment equipment, 1962-1986, by generation

<table>
<thead>
<tr>
<th></th>
<th>Contact</th>
<th>Proximity</th>
<th>Scanner</th>
<th>S&amp;R (1)</th>
<th>S&amp;R (2)</th>
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<td>P-Elmer</td>
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<td>&lt;1</td>
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<td>Total</td>
<td>61</td>
<td>75</td>
<td>99+</td>
<td>81</td>
<td>82+</td>
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Henderson & Clark, 1990
Tires Shipped By Construction Type: 1961-1989


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Existing Explanations

- **Stupidity**
  - If I ran GM...

- **Market Structure**
  - Fear of cannibalization

- **Innovator’s Dilemma problems**
  - We won't make nearly as much money

- **Blindness/Cognitive limitations**
  - Digital photography will be like conventional photography. Only digital

- **Old Patterns of Behavior**
  - That’s not the way we do things around here
WE THINK FIRMS ALSO GET “STUCK”
## Overload at PreQuip

<table>
<thead>
<tr>
<th>Active Projects (formal development projects by number)</th>
<th>Resources Required for Completion (months)</th>
<th>Months to Completion (desired)</th>
<th>Implied Development Resource Allocation (months)</th>
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<td>8</td>
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<td>86</td>
<td>12</td>
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<td>62 13 0</td>
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<td>29</td>
<td>153</td>
<td>18</td>
<td>60 93 0</td>
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<tr>
<td>30</td>
<td>29</td>
<td>3</td>
<td>29 0 0</td>
</tr>
<tr>
<td>All Other Support Activity (customer support, troubleshooting)</td>
<td>—</td>
<td>—</td>
<td>430 430 430</td>
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<tr>
<td>Total Development Requirements</td>
<td>—</td>
<td>—</td>
<td>2783 2956 2178</td>
</tr>
<tr>
<td>Available Resources (months)</td>
<td>—</td>
<td>—</td>
<td>960 960 960</td>
</tr>
<tr>
<td>Utilization (percent)</td>
<td>—</td>
<td>—</td>
<td>289.9 307.9 226.9</td>
</tr>
</tbody>
</table>

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Overcommitment destroys productivity

Average Value-Added Time on Engineering Tasks

Number of Projects per Engineer
And shifts attention away from early stage work
Overload → Productivity falls → Performance degrades

Productivity falls → Early stage work neglected

Early stage work neglected → No time for maintenance/training

No time for maintenance/training
So why don't we fix it?
Part 1
The usual “solutions” nearly always make things worse
Common responses to overload

- Blame the people who work for you
  - After all, last time you pushed them a little they came through for you…
  - So the problem must be with them – let’s put in more controls, tighten up our processes…
Overload

Performance degrades

The people who work for me are lazy..

We need more accountability, controls....

The Fundamental Attribution Error
Common responses to overload

- Blaming the people who work for you
  - After all, last time you pushed them a little they came through for you...
  - So the problem must be with them – let’s put in more controls, tighten up our processes...

- Working really, really hard – so hard that there isn’t time to make decisions
Why is it so hard to kill project #26?

- It’s a “good” project!
- Good managers can meet stretch goals (and I’m a good manager)
- Making difficult decisions would imply that we:
  - Had a strategy that we could use
  - Could talk to each other in productive ways

- *It’s very hard to do either when you’re overloaded*
Overload

Declining performance

The “what on earth do they think they’re doing” loop

We don’t have time to reflect

We can’t make decisions

We can’t make decisions
Overload → Productivity falls → Early stage work neglected → No time for strategy → Declining performance → My people are lazy → What are they thinking?!
My people are lazy

We’re not so bright, either

Overload

!!
Part 2
Really fixing the problem will hurt (short term) performance
Work smarter or work harder?
Working harder yields “better before worse”
Effort

Time Spent Improving

Time Spent Working

Time

* Capability

Actual Performance

Time

Time
Working smarter yields “worse before better”
Effort

Time Spent Improving

Time Spent Working

Time

Capability

Actual Performance

Time
What can be done?
Then:

- Have a clear strategy and live by it
- Manage capacity & make decisions
  - We found that we’d never shipped more than one new model…
- Face (and manage) “worse before better”
  - One bold leap or many small steps?
- Change your habits around problems
  - Respond to a screw-up as though it were a capability problem
- Build new kinds of conversations
  - This would only work if we told each the truth, wouldn’t it?
WHAT DOES THIS IMPLY FOR THOSE WHO WANT TO LEAD THE TRANSITION TO SUSTAINABILITY?