the lean enterprise

@jehzumble
7 november 2014
#gotoberlin
“precisely specify *value* by specific product, identify the *value stream* for each product, make value *flow* without interruptions, let the customer *pull* value from the producer, and pursue *perfection*”

Womack and Jones, *Lean Thinking*
enterprise

a complex, adaptive system
“Please select the statement that most closely aligns with how your company decides which products are built.”

- Committee decides from potential options (47%)
- Financial modeling (e.g. Economic value optimization) (24%)
- Opinion of person with highest salary wins out. (13%)
- Product portfolio approach (9%)
- No systematic approach (7%)

Base: 161 business decision makers

Source: A commissioned study conducted by Forrester Consulting on behalf of ThoughtWorks, September 2012
enterprise projects

Business
Let’s create a new product

Engineering
Project C
Project D
Project A
Project B

Operations
DBAs
Service desk
Infrastructure team

Value stream
We're going agile!

Oh shit!

Oh shit!
lifecycle of innovations
technology adoption lifecycle

Geoffrey Moore, *Crossing the Chasm*
three horizons

Baghai, M., Coley, S. and White, D., *The Alchemy of Growth*
## Intuit horizons and metrics

<table>
<thead>
<tr>
<th></th>
<th>Existing businesses</th>
<th>Adolescent businesses</th>
<th>Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment</td>
<td>60%</td>
<td>30%</td>
<td>10% of operating expenses, funded quarterly based on validated learning</td>
</tr>
<tr>
<td>Metrics</td>
<td>Growing category, Share, Net promoter, Revenue</td>
<td>Growth, Increasing efficiency (will lead to profitability)</td>
<td>Love Metrics based on delivering customer benefit, active product usage, proactive word of mouth</td>
</tr>
<tr>
<td>Example products</td>
<td>TurboTax, Mint</td>
<td>QuickBooks Online Accounting</td>
<td>SnapTax</td>
</tr>
<tr>
<td></td>
<td>Explore</td>
<td>Exploit</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Strategy</strong></td>
<td>Radical or disruptive innovation, new business model innovation</td>
<td>Incremental innovation, existing business model optimization</td>
<td></td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td>Small cross-functional multi-skilled team</td>
<td>Multiple teams aligned using Principle of Mission</td>
<td></td>
</tr>
<tr>
<td><strong>Culture</strong></td>
<td>High tolerance for experimentation, risk taking, acceptance of failure, focus on learning</td>
<td>Incrementally improve and optimize, values quality and customer satisfaction</td>
<td></td>
</tr>
<tr>
<td><strong>Risk management</strong></td>
<td>Biggest risk is failure to achieve product/market fit</td>
<td>A more complex set of trade-offs specific to each product/service</td>
<td></td>
</tr>
<tr>
<td><strong>Goals</strong></td>
<td>Create new markets, discover new opportunities within existing markets</td>
<td>Maximize yield from captured market, outperform competitors</td>
<td></td>
</tr>
<tr>
<td><strong>Measure of progress</strong></td>
<td>Achieving product/market fit</td>
<td>Outperform forecasts, achievement of planned milestones and targets</td>
<td></td>
</tr>
</tbody>
</table>
product/market fit

MOST IDEAS FAIL!
optionality

Nassim Taleb, *Antifragile*
build-measure-learn

Minimize the total time through the loop
hp laserjet firmware team

2008

10% - code integration
20% - detailed planning
25% - porting code
25% - current product support
15% - manual testing
~5% - innovation
deployment pipeline
### hp laserjet firmware team

<table>
<thead>
<tr>
<th>2008</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% - code integration</td>
<td>2% - continuous integration</td>
</tr>
<tr>
<td>20% - detailed planning</td>
<td>5% - agile planning</td>
</tr>
<tr>
<td>25% - porting code</td>
<td>15% - one main branch</td>
</tr>
<tr>
<td>25% - current product support</td>
<td>10% - one branch cpe</td>
</tr>
<tr>
<td>15% - manual testing</td>
<td>5% - most testing automated</td>
</tr>
<tr>
<td>~5% - innovation</td>
<td>~40% - innovation</td>
</tr>
</tbody>
</table>

The remaining 23% on RHS is spent on managing automated tests.
2008 to 2011

• overall development costs reduced by ~40%
• programs under development increased by ~140%
• development costs per program down 78%
• resources now driving innovation increased by 8X
What Business Leaders Think About The Business-IT Relationship

“What level of influence does your software development provider have when it comes to deciding which business services or products you deliver?”

- 42% As-a-service — it responds to our requests
- 14% A partner — it works with us
- 1% IT/engineering drives technology innovation
- 43% Other

Base: 161 business decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Thoughtworks, September 2012
IT as a competitive advantage

“Firms with high-performing IT organizations were twice as likely to exceed their profitability, market share and productivity goals.”

“it performance”?

lead time for changes

release frequency

time to restore service

change fail rate
highest correlation with it performance

• “Our code, app configurations and system configurations are in a version control system”
• “We get failure alerts from logging and monitoring systems”
• “Developers merge their code into trunk daily”
• “When development and operations teams interact, the outcome is generally win/win.”
• “Developers break up large features into small, incremental changes.”
top predictors of it performance

peer-reviewed change approval process

version control everything

proactive monitoring

high trust organizational culture

win-win relationship between dev and ops
## high trust culture

<table>
<thead>
<tr>
<th>Pathological (<em>power oriented</em>)</th>
<th>Bureaucratic (<em>rule oriented</em>)</th>
<th>Generative (<em>performance oriented</em>)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low cooperation</td>
<td>Modest cooperation</td>
<td>High cooperation</td>
</tr>
<tr>
<td>Messengers shot</td>
<td>Messengers neglected</td>
<td>Messengers trained</td>
</tr>
<tr>
<td>Responsibilities shirked</td>
<td>Narrow responsibilities</td>
<td>Risks are shared</td>
</tr>
<tr>
<td>Bridging discouraged</td>
<td>Bridging tolerated</td>
<td>Bridging encouraged</td>
</tr>
<tr>
<td>Failure leads to scapegoating</td>
<td>Failure leads to justice</td>
<td>Failure leads to enquiry</td>
</tr>
<tr>
<td>Novelty crushed</td>
<td>Novelty leads to problems</td>
<td>Novelty implemented</td>
</tr>
</tbody>
</table>

changing culture

http://www.thisamericanlife.org/radio-archives/episode/403/nummi
http://sloanreview.mit.edu/article/how-to-change-a-culture-lessons-from-nummi/

Schein, *The Corporate Culture Survival Guide*
improvement kata
improvement kata

What is the target condition? *(The challenge)*

What is the actual condition now?

What obstacles are preventing you from reaching it? which one are you addressing now?

What is your next step? *(Start of PDCA cycle)*

When can we go and see what we learned from taking that step?
### Table 5.1. Sample Mini-Milestone Objectives (MM30 Objectives)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Theme</th>
<th>Exit Criteria:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Objective Met/Objective not met</td>
</tr>
<tr>
<td>0</td>
<td>Quality threshold</td>
<td>P1 issues open &lt; 1 week L2 test failure 24-hour response</td>
</tr>
<tr>
<td>1</td>
<td>Quarterly bit release</td>
<td>A) Final P1 change requests fixed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B) Reliability error rate at release criteria</td>
</tr>
<tr>
<td>2</td>
<td>New platform stability and test coverage</td>
<td>A) Customer Acceptance Test 100% passing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B) All L2 test pillars 98% passing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C) L4 test pillars in place</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D) L4 test coverage for all Product Turn On requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E) 100% execution of L4 tests on new products</td>
</tr>
<tr>
<td>3</td>
<td>Product Turn On dependencies and key features</td>
<td>A) Print for an hour at speed to finisher with stapling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B) Copy for an hour at speed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C) Enable powersave mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D) Manufacturing nightly test suite execution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E) Common Test Library support for four-line control panel display</td>
</tr>
<tr>
<td>4</td>
<td>Build for next-gen products</td>
<td>A) End-to-end system build on new processor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B) High-level performance analysis on new processor</td>
</tr>
<tr>
<td>5</td>
<td>Fleet integration plan</td>
<td>Align on content and schedule for “slivers” of end-to-end agile test with system test lab</td>
</tr>
</tbody>
</table>
impact mapping

Gojko Adzic, *Impact Mapping*
hypothesis-driven delivery

We believe that

[building this feature]

[for these people]

will achieve [this outcome].

We will know we are successful when we see

[this signal from the market].

Jeff Gothelf “Better product definition with Lean UX and Design” http://bit.ly/TylT6A
“Evaluating well–designed and executed experiments that were designed to improve a key metric, only about 1/3 were successful at improving the key metric!”

“Online Experimentation at Microsoft”, Kohavi et al  http://stanford.io/130uW6X
Amazon May Deployment Stats
(production hosts & environments only)

11.6 seconds
Mean time between deployments (weekday)

1,079
Max # of deployments in a single hour

10,000
Mean # of hosts simultaneously receiving a deployment

30,000
Max # of hosts simultaneously receiving a deployment
“I think building this culture is the key to innovation. Creativity must flow from everywhere. Whether you are a summer intern or the CTO, any good idea must be able to seek an objective test, preferably a test that exposes the idea to real customers. Everyone must be able to experiment, learn, and iterate.”

questions

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http://continuousdelivery.com/

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