Building the Right Product Using Experiment-Driven Development
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Accelerate Agility
Transformation | Training | Coaching
<table>
<thead>
<tr>
<th>Align</th>
<th>Learn</th>
<th>Predict</th>
<th>Accelerate</th>
<th>Adapt</th>
</tr>
</thead>
<tbody>
<tr>
<td>The goal for the transformation cannot be to do Agile. Understanding and communicating the business objectives that will be achieved with the transformation is a critical first step.</td>
<td>Through Agile training and coaching, teams and leadership are equipped with new techniques and an understanding of how Agile works. Ownership of processes are transferred to an empowered team and a culture of continuous improvement is put in place.</td>
<td>Teams harden these newly learned practices and become more disciplined in order to deliver working product in a predictable and iterative manner.</td>
<td>Agile will begin to permeate throughout the organization and executive leadership, enabling empowered teams and adaptive leadership to respond to ever-changing market demands as they have transformed to an organization with true Agility.</td>
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**Status Quo**

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**New Status Quo**

Once the teams become disciplined and predictable, we can focus on team and organizational improvements to optimize across the full delivery cycle and shorten time to market.
What if we found ourselves building something that nobody wanted?

In that case, what did it matter if we did it on time, on budget, and with high quality?

Has this ever happened to you?
Let’s celebrate our failures! ???

$200M SW/HW development investment, 12 months.

Result: $0 revenues.
Experiment-Driven Development (EDD)
<table>
<thead>
<tr>
<th>Your Reality</th>
<th>Your Product Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>How long is the Release cycle? (From Concept to Customer)</td>
<td></td>
</tr>
<tr>
<td>How many features are released together?</td>
<td></td>
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<tr>
<td>How is success determined?</td>
<td></td>
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</tbody>
</table>
Nordstrom Video
<table>
<thead>
<tr>
<th>Debrief</th>
<th>Your Product Today</th>
<th>Video</th>
<th>Impact?</th>
</tr>
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</table>
Activity:

Huddle up in pairs or 3s.

Discuss what was different in this approach vs. your current project/product.
Debrief - Potential Differences:

“Never work on things that are not valued by the customer!”
Develop a short list of product hypotheses:

- Consider “baked-in” assumptions
- Define testable hypotheses from assumptions
- Prioritize these hypotheses - based on potential learnings

Types of hypotheses:

- Customer
- Problem
- Solution
- Value
- Growth
Product Hypothesis - Examples

Growth hypothesis:
“An in-store available iPad app will increase sunglass sales by 20%.”

Problem hypothesis:
“Potential customers have no obvious way to compare different versions of sunglasses other than sequential looks in a mirror.”

Value hypothesis:
“Allowing the customer to ‘compare’ themselves side-by-side in different sunglasses will enhance their overall satisfaction at our sunglass station by 40%.”

Solution hypothesis:
“When offered, more than 50% of potential customers will choose to use an iPad app to make it easier to try on sunglasses.”
Activity:

Using an index card, write out a **testable** hypothesis for a product you are currently working on (or recent one).

- Hint: consider your **baked-in assumptions**!

Identify type as customer, problem, solution, value, or growth type.

Share with a new friend from another table you have not met yet!
EDD Step 2: Identify Experiments

Take your **highest priority Hypothesis** and define the **smallest experiment** that will prove or disprove it.

Examples:

- **Hypothesis**: An in-store available iPad app will increase sunglass sales by 20%.
  
  **Experiment 1**: Develop a basic iPad app that allows customer to compare what they look like with various sunglasses.

  **Experiment 2**: Roll out to 10 stores only, measure sales impact.

- **Hypothesis**: Side-by-Side is a better comparison technique than multi-pic.

  **Experiment 1**: Create a multi-layout technique showing up to 6 different pics in the main view

  **Experiment 2**: Demo both approaches (side-by-side and multi-view) to at least 100 customers. Measure preference %.
Activity:

On the back of your index card, write 2 - 3 experiments for your product hypothesis.

Share your product hypothesis and experiments with a different new friend.
Experiment Backlogs

• Similar to Scrum product backlog
• But is learning-based prioritization

• List of all experiments 1..n
  Work items, mocks, research, etc.
• Tagged with Hypothesis description
Nielsen DCAPI project - Learning Map
EDD Step 3: Run Experiments
Experiments - Validated Learnings

- Build out the MVP
- Measure progress based on validated learning from end user!
- Use modified storyboard showing **Validated column**

<table>
<thead>
<tr>
<th>To Do</th>
<th>In Work</th>
<th>Done</th>
<th>Validated</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXP-5</td>
<td>EXP-3</td>
<td>EXP-2</td>
<td>EXP-1</td>
</tr>
<tr>
<td></td>
<td>EXP-4</td>
<td></td>
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</tr>
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</table>
Experiment Test Iteration (ETI)

Scrum: fixed iteration length

ETI: variable iteration length

<table>
<thead>
<tr>
<th>Sprint 1 Weeks</th>
<th>Sprint 2 Weeks</th>
<th>Sprint 3 Weeks</th>
<th>Sprint 4 Weeks</th>
<th>Sprint 5 Weeks</th>
<th>Sprint n Weeks</th>
</tr>
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<tbody>
<tr>
<td>1 2 3 4</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ETI 1 3 days</th>
<th>ETI 2 5 days</th>
<th>ETI 3 9 days</th>
<th>ETI 4 17 days</th>
<th>ETI 5 6 days</th>
<th>ETI 6 7 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVP1 MVP2 MVP3</td>
<td>MVP4 MVP5 MVP6</td>
<td>MVP2 MVP3 MVP4</td>
<td>MVP5 MVP6 MVP1</td>
<td>MVP3 MVP4 MVP5</td>
<td>MVP4 MVP5 MVP6</td>
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</table>
ETI Review

• Dev team demos their working software
• Team discusses validated learnings with stakeholders
• Decision: Pivot/Persevere/Quit

• Plus:
  - How is the team feeling about the baked-in assumptions?
  - Are there any assumptions not previously considered?
SIMULATION
Hypothesis:
“A tower made of spaghetti, string, tape, and a single marshmallow on top can be made to stand over 28 inches tall.”

Supplies
- 20 Sticks of Spaghetti
- 1 Yard of Tape
- 1 Yard of String
- 1 Marshmallow

Rules
- Tower must be free-standing (no support other than floor/table base)
- Tower must remain standing indefinitely
- Marshmallow must be on top and remain intact
- 18 minutes total - run multiple BML loops
- Highest measurement from base to top wins!
Activity:

Using post-it notes, identify 3 - 5 Experiments to try, 1 per post-it note.

Order the Experiment cards based on potential learnings.

18-minute timeframe begins when instructor says “Ready/Set/Go”.

Build/Measure/Learn loops: adjust the experiments as you go, pivot/persevere.
Debrief

Observations?

How did you use your validated learnings?

Did your Experiments Backlog change as you executed the iterations?

Would more planning time have really helped?

Did any team PIVOT to a new hypothesis (different approach, different structure type)?
Ted Talk - Marshmallow Challenge
WRAP
EDD in a Nutshell

Product Hypotheses ➔ Experiments ➔ Build-Measure-Learn Loops ➔ The Right Product!
We value

• **Validated learning** over seemingly-reasonable assumptions

• **Data-driven decisions** over plausible-sounding arguments

• **Building minimum learning products** over additional features

• **The courage to build the right thing** over something that works

A Post-Agile Manifesto
Call to Action!
Don’t Miss Other Agile Velocity Speakers

The Post Project Era: The Future of Agile
David Hawks | Monday 11:00 AM | Room 200 E
It’s time to shift from a project-driven mindset to a value-driven mindset. David explores how traditional practices slow product development and what needs to change to support this shift.

Move Beyond User Stories… What’s Next?
David Hawks | Wednesday 9:15 AM | 101 E
The current epic and user story process is stale and needs to go. In this hands-on workshop, you’ll learn a new discovery-centered model driven by objectives, hypotheses, and experiments.

Building the Right Product Using Experiment-Driven Development
Mike Hall | Monday 2:30 PM | Room 200 E
Experiment-Driven Development (EDD) is an emerging Agile approach designed to ensure that we always build the right product. Join us to explore how to create a culture of experimentation within your team

10 Steps to a Successful Enterprise Agile Transformation: The Precipitous Path to Predictability!
Mike Hall | Wednesday 11:00 AM | Room 200 E
Navigate the precipitous path to predictability through 10 tangible steps to a successful enterprise Agile Transformation.

Why Are We Stuck? Getting Back To Continuous Improvement
Reese Schmit | Monday 1:00 PM | Room 200 GH
When things are going well, it’s hard to find motivation to improve. In this session, you will learn the symptoms of a stuck team and discover tools to get them back on the path of relentless improvement.
Give us a business card or your name and email on an index card, and we will send you the following:

• The slides presented today
• A video on a related topic
• An article on Next Level Agile
Thank You!