PHILIPS

sense and simplicity

From Lean Product Development towards Lean Innovation

Experiences within Philips Electronics

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What can you expect this Webinar?

*Agenda*

- Introduction
- Why Lean in Product Development
- Elements of Lean Product Development
- Implementing Lean Product Development
- From Lean Product Development towards Lean Innovation
- Q&A
Introduction Wil van Mil

Senior Innovation Consultant @ Philips Industry Consulting

• Background
  – Study on Mechanical Engineering
  – 25 year experience in Innovation
  – Software developer, project leader, group manager, consultant
  – Improver

• Main focus area
  – Lean Product Development
Philips defined: we are…

“…a global company of leading businesses creating value with meaningful innovations that improve people’s health and well-being.”
Why Lean Product Development

- High pressure on Innovation, difficult to get sustainable improvement
- Lean is common practice in Manufacturing
- Lean Development shows impressive results
Lean Development within Philips

Applying it in some areas, starting up in others

• Lean in Operations for years

• Applying Agile Programming in software development

• Started with Lean Product Development
  – One site in the Philips Netherlands achieved 2 times as many projects with same total innovation costs
How did Lean Product Development start

*Study showed big differences between Lean and traditional companies*

NMCS: National Center for Manufacturing Sciences
Why not just apply Lean Manufacturing Methods

*Manufacturing is transactional, Development is knowledge creating*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Manufacturing</th>
<th>Development</th>
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<tbody>
<tr>
<td>Cycle/Lead time</td>
<td>Minutes to weeks</td>
<td>Weeks to years</td>
</tr>
<tr>
<td>Certainty of outcome</td>
<td>Very clear</td>
<td>Fuzzy at the beginning</td>
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<tr>
<td>Repeatability</td>
<td>Many copies</td>
<td>Every project unique</td>
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**Base is the same**

Solving Problems for Continuous Improvement by the People Doing the Work
The 7 Wastes can be translated into Development

Example: the Waste of Waiting

- People waiting for information
- Information waiting for people
- Engineers waiting for decisions
Other Translations of Waste in Development

- **Over processing** → Reports never used
- **Inventory** → Partially done work
- **Overproduction** → Too much detail
- **Unnecessary motion** → Searching info

- However, in Development another waste is even more important
Waste of Knowledge

Examples

Scatter
Too many projects in parallel

Hand-off
Throw technical drawings “over the wall” to operations

Wishful thinking
Making decisions without facts or operating blindly

Discarded knowledge
No cross project learning

Source: Allen Ward, Lean Product and Process Development
Overview of Lean Development Wheel

Eight areas for improvement

1. Value focus
   Separates value from waste

2. Platform development

3. Set-based Concurrent Engineering

4. Reduce waste, overburden and variation

5. Integral project leaders
   Focus on content iso. control

6. Teams of responsible experts

7. Lean culture of continuous improvement

8. Visual communication
Set Based Concurrent Engineering

From quickly selecting a point solution with high risk of loopbacks, towards a system approach with investigating many options, slowly converging to a solution
Building Knowledge

There are two value streams: creating knowledge and creating products.
Overview of Lean Development Wheel

*Eight areas for improvement*

- **Value focus**
  Separates value from waste
- **Visual communication**
- **Integral project leaders**
  Focus on content iso. control
- **Teams of responsible experts**
- **Platform development**
- **Set-based Concurrent Engineering**
- **Reduce waste, overburden and variation**
- **Lean culture of continuous improvement**

*Philips Industry Consulting – Lean Product Development Webinar – W.C.M. van Mil – 28 September 2010*
How to Implement Lean Development

There is not one way to implement

• How to implement

  – Through project or functional axis?

  – How to deal with this fuzzy nature in the beginning of projects?

  – Is there an implementation sequence?
Implement through the Project or the Functional Axis?

*You need both improvement directions*
Implement through the Project or the Functional Axis?

You need both improvement directions

- Marketing
- Development
- Purchasing
- Factory Engineering

PROJECT

Improve in projects

Improve in functions
Projects are Reducing Uncertainty

Too much uncertainty at the end leads to delays

In the beginning of a project a lot is uncertain

At the end everything is known, the product is there
Lean Reduces Uncertainty Fast

Through quick cycles, fast prototyping, set-based concurrent engineering, applying known solutions, frontloading the process.
How does Philips Manage the differences

*Through two types of projects*

![Uncertainty and Time Graph](Image)

- **Knowledge Generation / Function Creation**
- **Product Development**

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Is there an Implementation Sequence?

*Sequences depend on organization, some examples*

- Research & Development organization → Focus on knowledge
  - *Example: Philips LED*

- Development needs to be more efficient → Continuous Improvement
  - *Example: Dutch Bed manufacturer*

- Engineering to Order organization → Create Flow
  - *Example Philips Lighting (2 weeks → 2 days)*

- In General
  - *Determine the problem you want to solve*
  - *Find a coach to help you look with a new perspective*
From Lean Development to Lean Innovation

*Lean Development only focuses on a part of the Innovation chain*
From Lean Development to Lean Innovation

Lean Innovation has the ambition to focus on the overall Innovation process.
Value Stream Mapping for Lean Innovation

*Example of a Value Stream Mapping done for Philips Consumer Lifestyle*

Current State + Problems

Future State + Opportunities
Summary

• Lean Product Development has proven results

• Lean addresses the culture in your organization

• We can learn a lot from Lean Manufacturing, Development however needs a different approach.

• Key in Lean Development is Knowledge

• Implementation depends on the nature of your organization

• Lean Innovation broadens the scope
Want to Start Tomorrow?

*We can help you*

- Lean is not just an improvement project of a few months, it is a journey of years
- We typically assist in this journey through:
  - Awareness sessions
  - Opportunities scans
  - Training & coaching of teams
  - Value Stream Mapping workshops, etc.
Q&A
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