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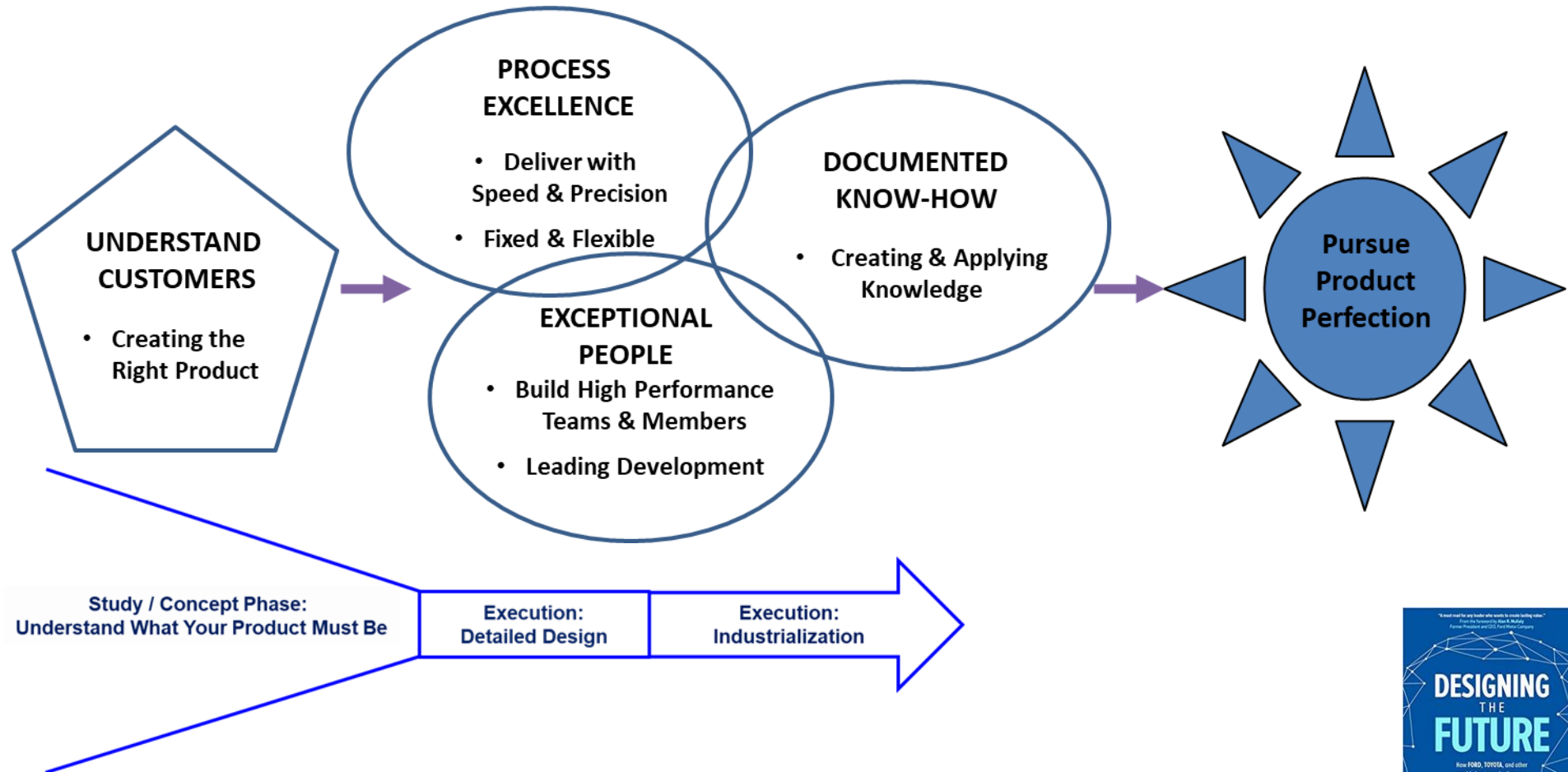
Lean Product &  
Process Development

# 12 Wastes of Product and Process Development

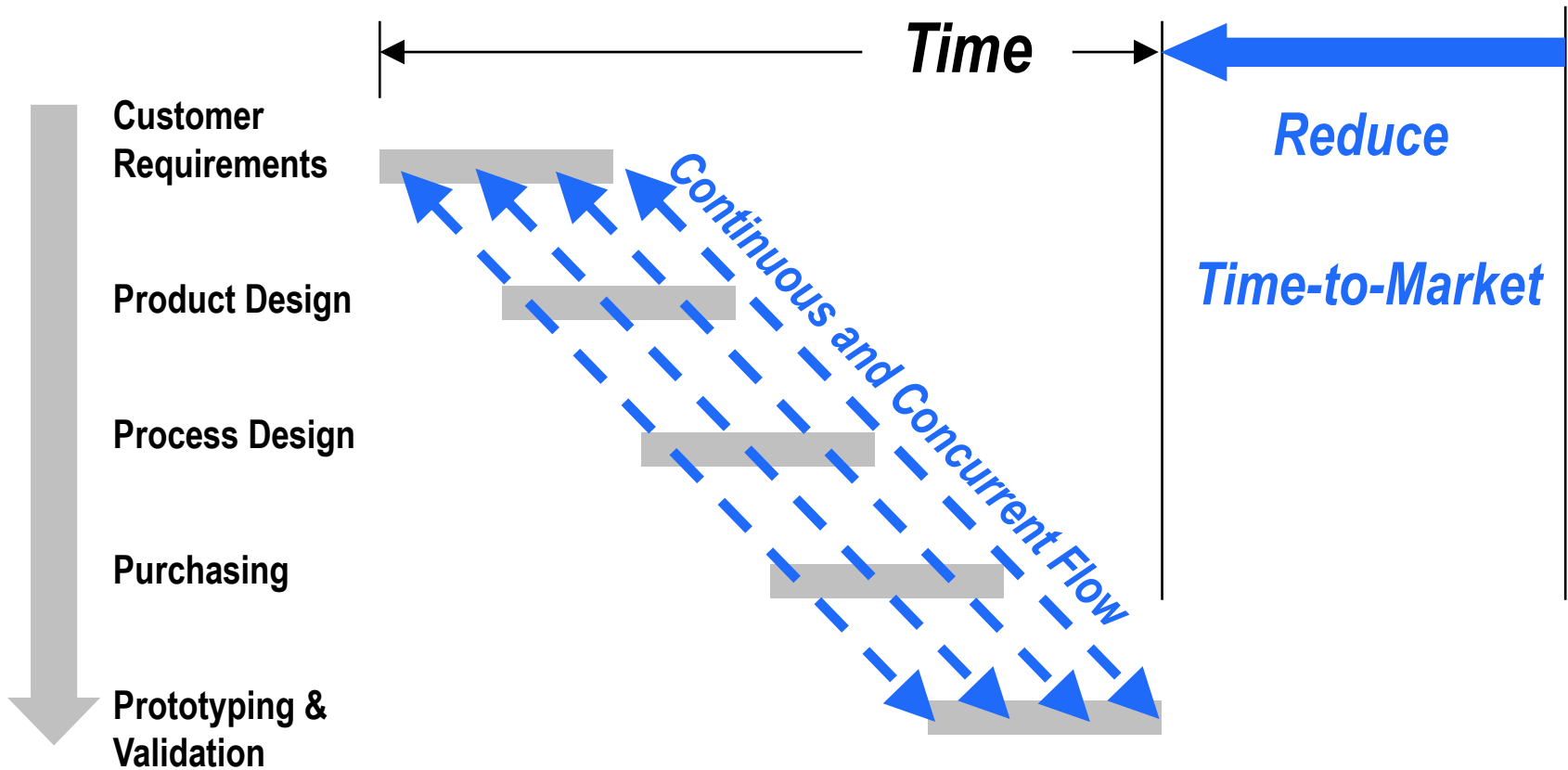
**Katrina Appell, PhD    John Drogosz, PhD**

*Changing the way new value is created*

# Lean Product and Process Development



# Deliver with Speed and Precision



# Where is the waste?



Difficult to see but  
it is there....

# Product & Process Development Wastes

## 12 Wastes

- 1) Hand offs
- 2) Waiting
- 3) Overdoing
- 4) Rework/Redundant tasks
- 5) Stop and go tasks
- 6) Reinvention waste
- 7) Unused/Misused talent
- 8) Transaction waste
- 9) High process and arrival variation
- 10) System overutilization
- 11) Wishful Thinking
- 12) Unsynchronized concurrent tasks

# Product & Process Development Wastes

- **Handoffs**
  - Misunderstandings
  - Delays in responses
- **Waiting**
  - Information
  - Events
  - Resources
  - Decisions
- **Overdoing**
  - Knowledge that isn't used
  - Overdesigning products and processes that customers do not want
  - Reporting

# Product & Process Development Wastes

- **Rework / Redundant Tasks**
  - Multiple reviews, approvals
  - Errors leading to re-doing tasks
  - Redesign from not having the right info at the right time
- **Stop and Go Tasks**
  - Reorienting / set up time between tasks
  - Multi-tasking
- **Reinvention Waste**
  - Re-creating knowledge we already have
  - “Not invented here”

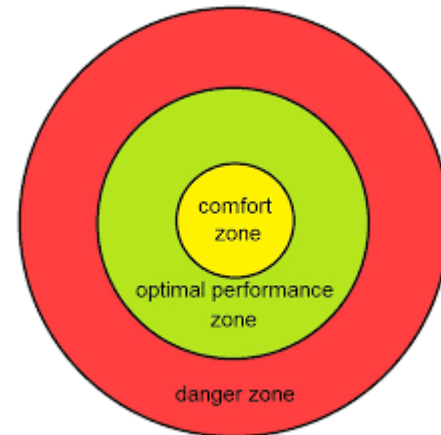
# Product & Process Development Wastes

- **Unused / Misused Talent**

- Working on projects or tasks customers don't want
- Can be demoralizing
- Can be dis-respectful



Source: *Drive* by Daniel Pink



Source: Carol Dweck



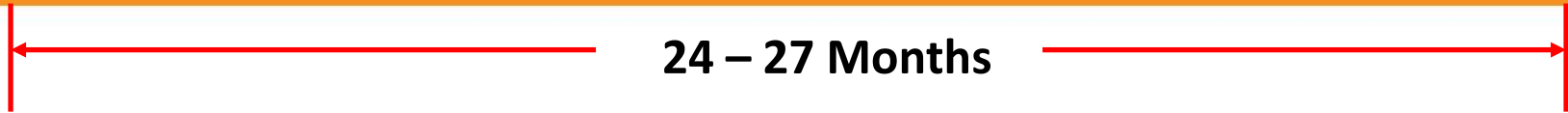
# Product & Process Development Wastes

- **Transaction Waste**
  - Arranging for work to be done
    - Contract negotiations
    - Quotations
    - Resource scheduling
- **High Process and Arrival Variation**
  - Everyone doing tasks in their own way
    - Lack of standards
    - Inadequate training to standards
  - Batching

# Product & Process Development Wastes

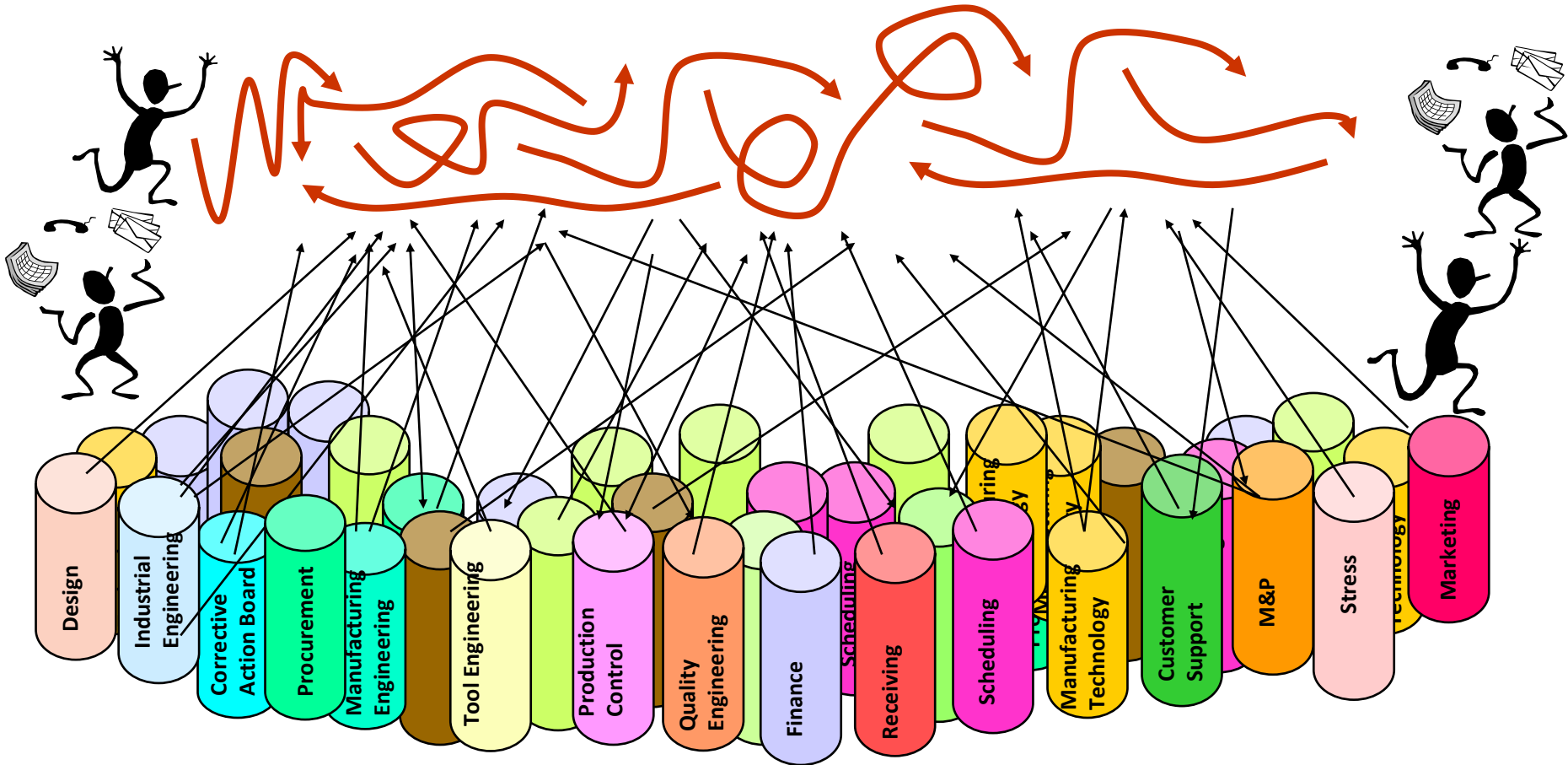
- **System Over-Utilization**
  - Planning for 100% utilization (often greater than 100%)
  - Utilization over 80% results in dramatically higher lead-times
- **Waste of Wishful Thinking**
  - Decisions with inadequate knowledge
  - Unrealistic timelines
  - Overly optimistic plans for creating new knowledge
    - “We plan for one, we expect two, it often takes three”
- **Unsynchronized Concurrent Tasks**
  - Cause of many other wastes

# Example: Current State Map



- Understand the work together
- Identify wastes /opportunities for improvements
- Common agreement on what is causing the wastes

# Value Delivery Process is not always Facilitated by Functionality

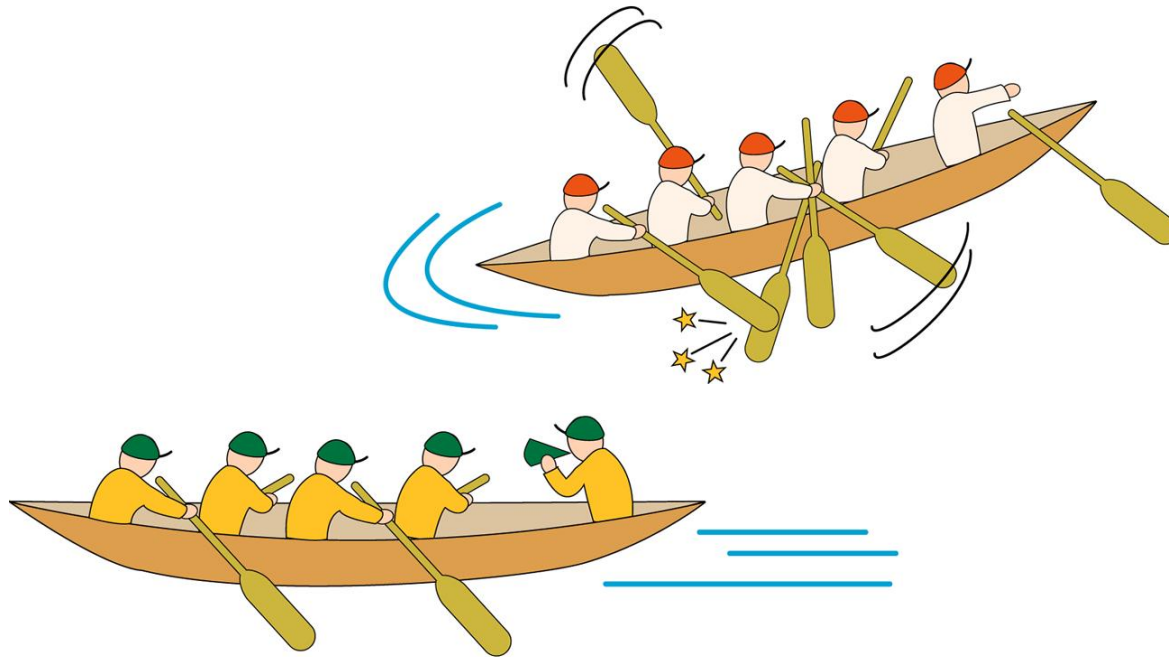


# Example: Future State



- Plan the work together to create flow
- Eliminate *systemic wastes* rather than chasing local waste
- Design a system that enhances people's talent instead of one that frustrates and defeats it

# Individual Efficiency vs Total Efficiency



***Working together to create value and eliminate waste***

# Questions



# Learn more...

- Designing the Future: A Lean Product Development Immersive Experience
  - April 20-21 in Novi, MI  
(<https://www.lean.org/Workshops/WorkshopDescription.cfm?WorkshopId=138>)
- Designing the Future Summit
  - June 18-19 in Traverse City, MI (<https://www.lean.org/designfuture2020>)
- [leanpd.org](http://leanpd.org)
- Contact us:
  - [kappell@leanpd.org](mailto:kappell@leanpd.org)
  - [jdrogosz@leanpd.org](mailto:jdrogosz@leanpd.org)