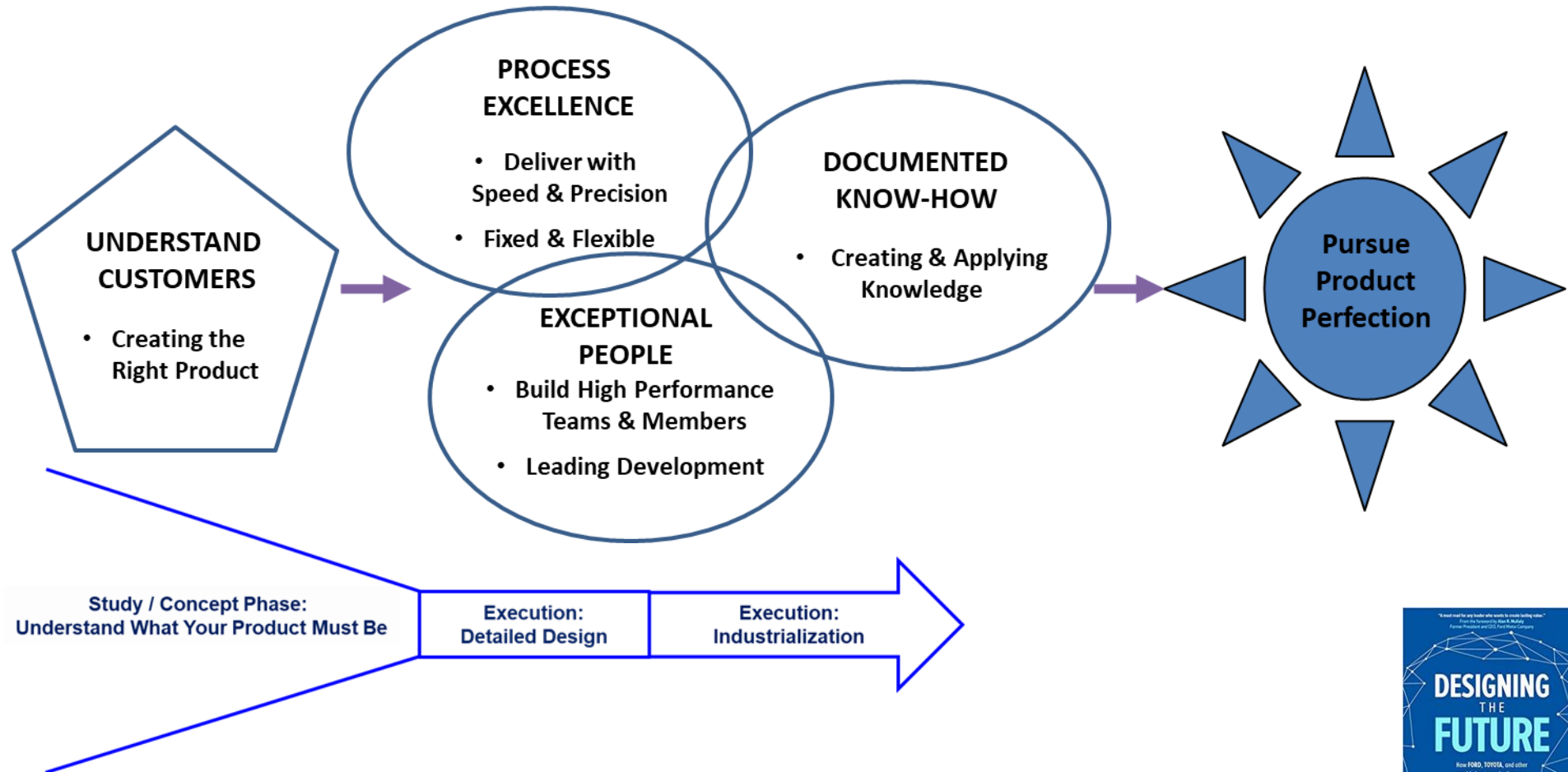# 12 Wastes of Product and Process Development
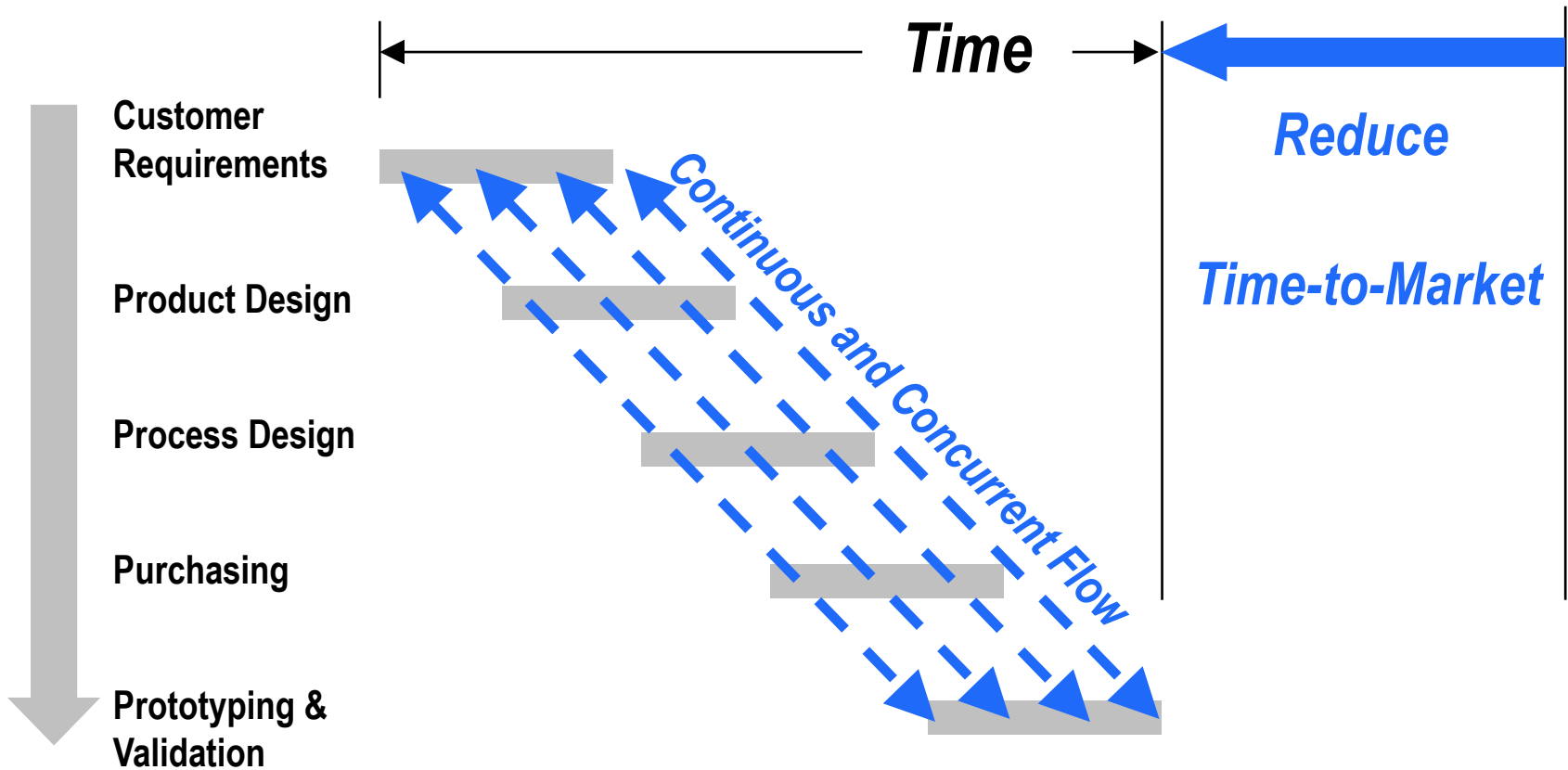
Katrina Appell, PhD   John Drogosz, PhD

Changing the way new value is created

Lean Product and Process Development

UNDERSTAND CUSTOMERS
- Creating the Right Product

PROCESS EXCELLENCE
- Deliver with Speed & Precision
- Fixed & Flexible

EXCEPTIONAL PEOPLE
- Build High Performance Teams & Members
- Leading Development

DOCUMENTED KNOW-HOW
- Creating & Applying Knowledge

Pursue Product Perfection

Study / Concept Phase: Understand What Your Product Must Be

Execution: Detailed Design

Execution: Industrialization

lppd **Lean Product & Process Development**

DESIGNING THE FUTURE
How FORD, TOYOTA, and other world-class organizations use lean product development to drive innovation and transform their business

JAMES M. MORGAN
JEFFREY K. LIKER

Deliver with Speed and Precision

Time

Customer Requirements

Product Design

Process Design

Purchasing

Prototyping & Validation

Continuous and Concurrent Flow

Reduce

Time-to-Market

Where is the waste?

Difficult to see but it is there….

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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

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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"

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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
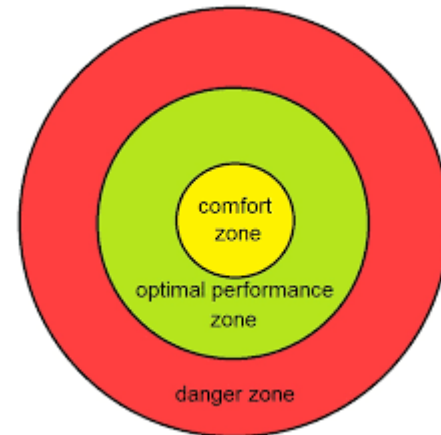
Source: Carol Dweck

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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

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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**
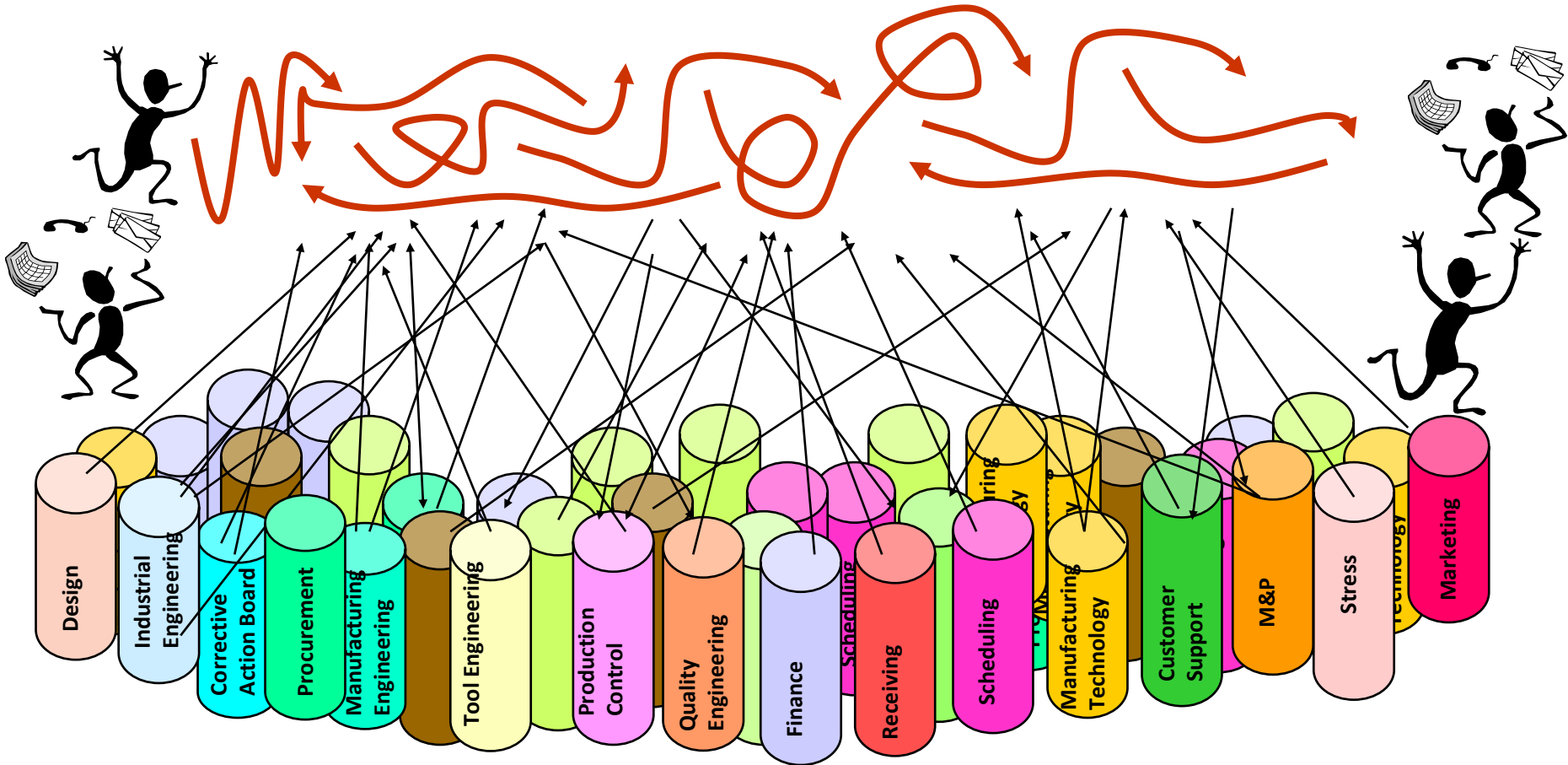 - Cause of many other wastes

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Example: Current State Map

24 – 27 Months

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

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Value Delivery Process is not always Facilitated by Functionality

Example: Future State

16 – 18 Months
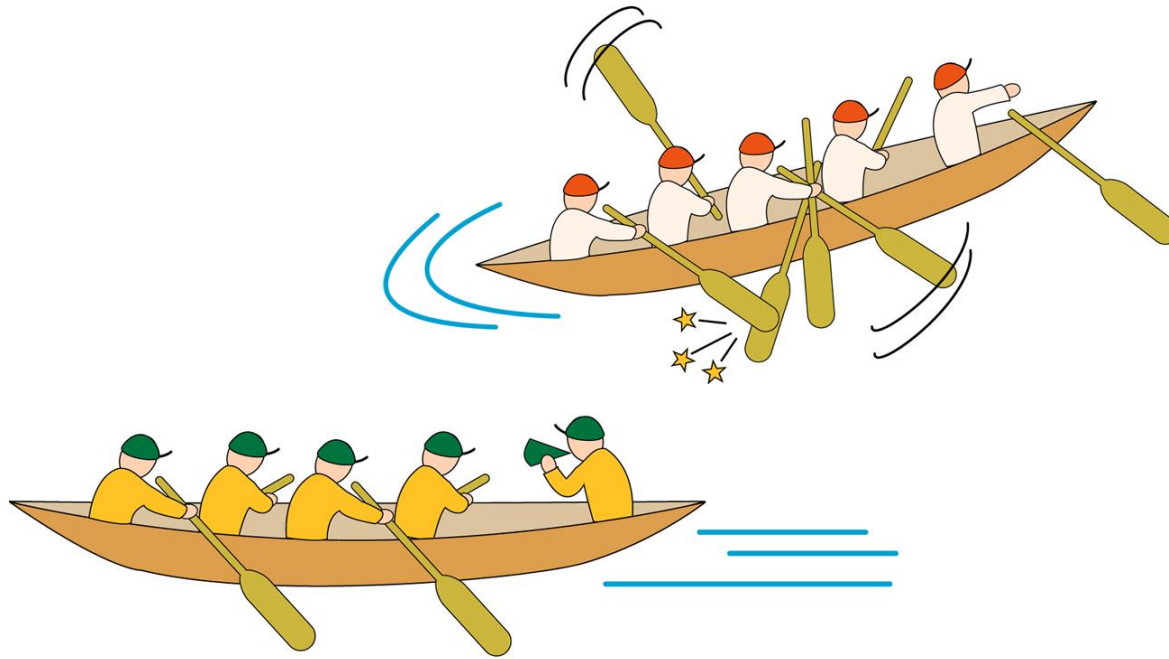
- Plan the work together to create flow
- Eliminate *systemic wastes* rather than chasing local waste
- Design a system that enhances people's talent instead of one that frustrates and defeats it

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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

- Contact us:
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