



**DEVOPS
ENTERPRISE
SUMMIT**

THE NEED FOR SPEED

Enabling DevOps Through Enterprise Architecture

MARK LANDY & WILL EVANS



The Johnson & Johnson Family of Companies is organized into several business segments comprised of franchises and therapeutic categories.

More than 125 Years of Caring. Our 128,300 employees touch the lives of over a billion people every day, throughout the world.

MEDICAL DEVICES

CONSUMER

PHARMACEUTICAL

500K

Unique Visitors

14

Acquisitions /
Divestitures
in Flight

450

Apps Released
Each Year

500

Terabytes of Data

\$113

JNJ NYSE

\$311B

MktCap

\$2B

Annual IT Spend

Risk sharing

*Millions of
new patients*

*Active policy
makers*

*Expanding
care venues*

*Shift to
outcomes*

Consolidation

A NEW WORLD OF HEALTHCARE TECHNOLOGY

3D Printing

*Advanced
Analytics*

Cloud

Mobile

Robotics

*Internet of
Things*

EPHEMERALIZATION

How software is eating healthcare technology...

Buckminster Fuller, "Ephemerization - Doing more with less," TEDEd, <http://buff.ly/2eslJhz>

**2014 –
Today**

EMERGENCE

Directed Opportunism & Asymmetries

Marc Rettig, 2016, "Notes on Emergence," Medium, <http://buff.ly/2fmhanx>

WE ARE RESPONSIBLE TO OUR...

Doctors, Nurses, and Patients,
Employees and Their Families,
Communities Where We Work,
Finally, to Our Shareholders



The Phoenix Project

by Scott Brinker
with a foreword by
Marc Andreessen



“

Organizations which design systems are constrained to produce designs which are copies of the communication structures of these organizations.

”

— MELVIN CONWAY

THEORY OF CONSTRAINTS

WHY
Change?

How to
CAUSE
the change?

WHAT
to change?

What to
CHANGE
TO?

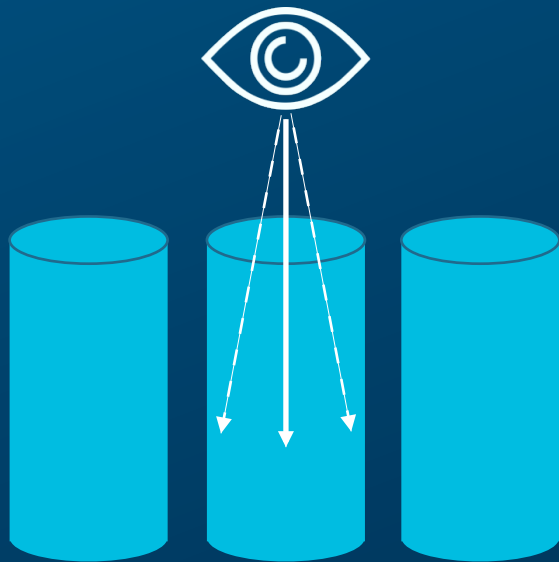


SYSTEMS THINKING

From local optima to whole-enterprise mindset

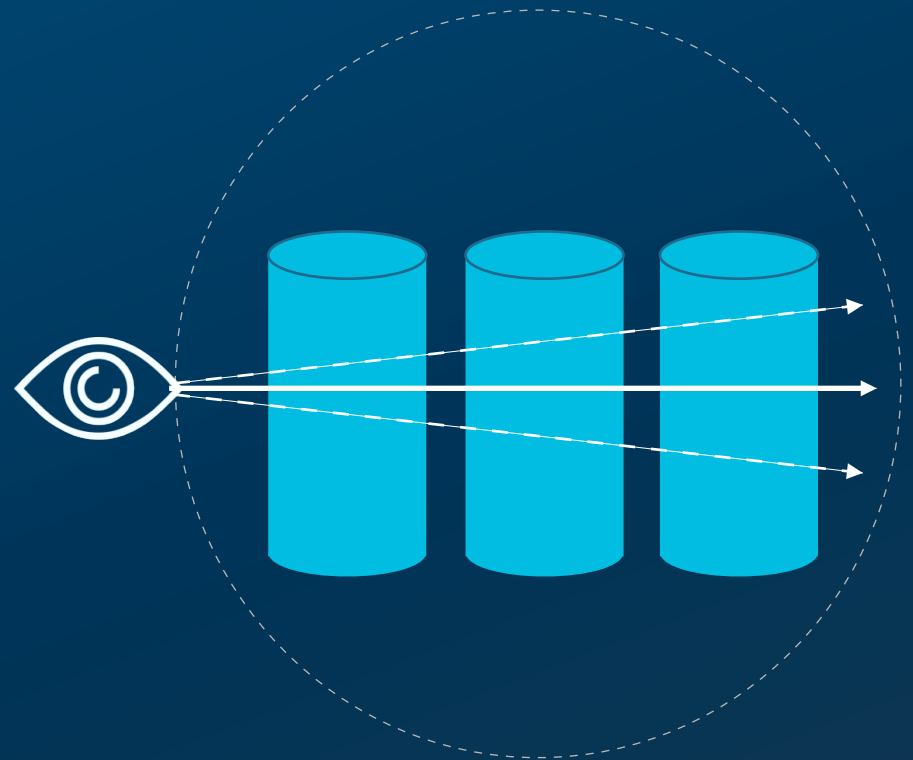
ENTERPRISE

LOCAL OPTIMA



VS

GLOBAL OPTIMA



FEDERATED ENTERPRISE ARCHITECTURE



Theory of Constraints | Hoshin Kanri | Lean & Kanban

Federated Enterprise Architecture (FEA)

NARRATIVE AND THEORY OF OPERATIONS
*A discussion on the problems resultant from the current
state of Architecture as practiced, and observed at J&J, and
a diagnosis and approach for change.*

Mark Landy, Will Evans, Jabe Bloom

July 7, 2015

Complexity Thinking | Cost of Delay | Continuous Improvement

DECISION MAKING

Complexity informed design thinking applied to FEA means **leveraging an abductive sensemaking process** of manipulating, organizing, pruning and **filtering demand** (*both failure and value demand*) through **human sensor networks** to get ahead of business intent.



“

Enterprises which design & execute strategies are constrained to produce & fund projects reflecting organizational and temporal silos.

”

- MELVIN CONWAY(REDUX)

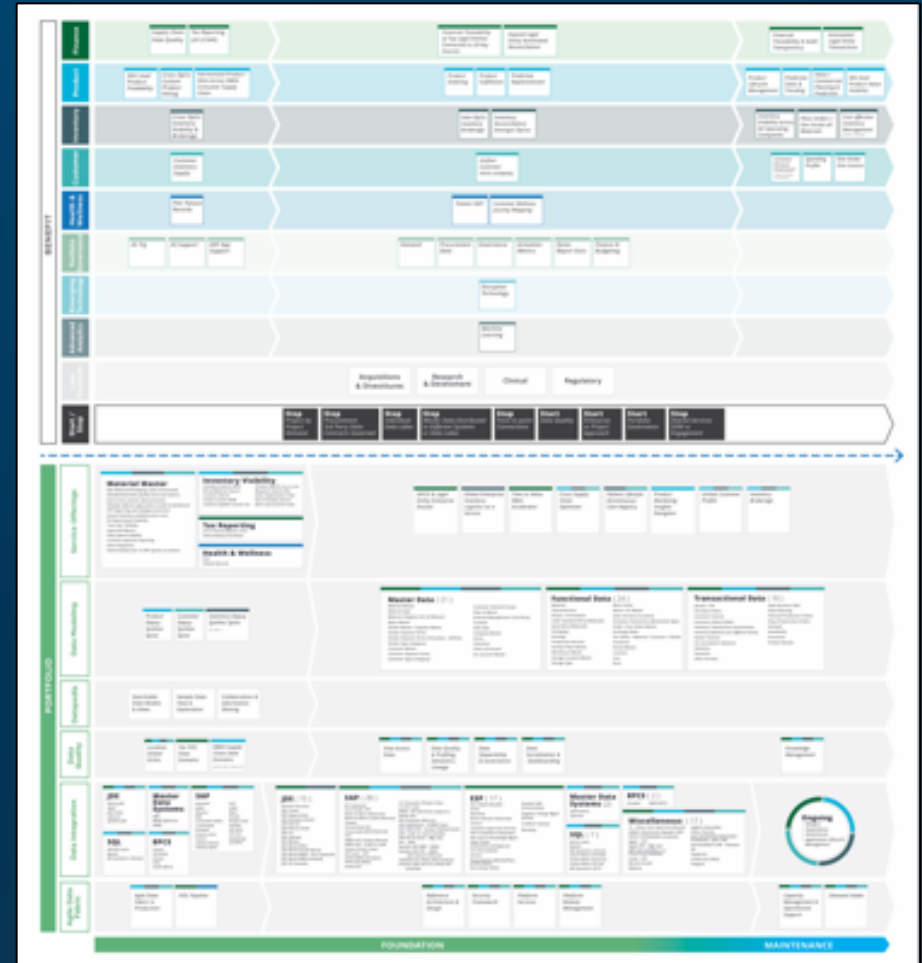
FUND STRATEGIES WITH **VISIBLE** **OUTCOMES**

not (only) projects with completion data....

- *PROJECT(s) create a localized space, with little real flexibility for experimentation; No slack.*
- Organizations, functions, and companies create and sponsor PROJECTS which are constrained to localized sponsor's need, not Enterprise capability...
- PROJECTS are Temporal Silos which struggle with time horizons greater than 1 year, particularly in publicly traded enterprises.
- To deliver **VALUE/OUTCOMES**, STRATEGICALLY, we must therefore relax the lateral (silo) and temporal (duration) constraints of a FUNDING corridor.

WHICH ENABLES ENTERPRISE AGILE DATA

By making our work & decisions visible over a rolling 4 year window, we allocate the necessary breadth and depth of resource & systems thinking required to “be” strategic, respond to change, inspect and adapt.

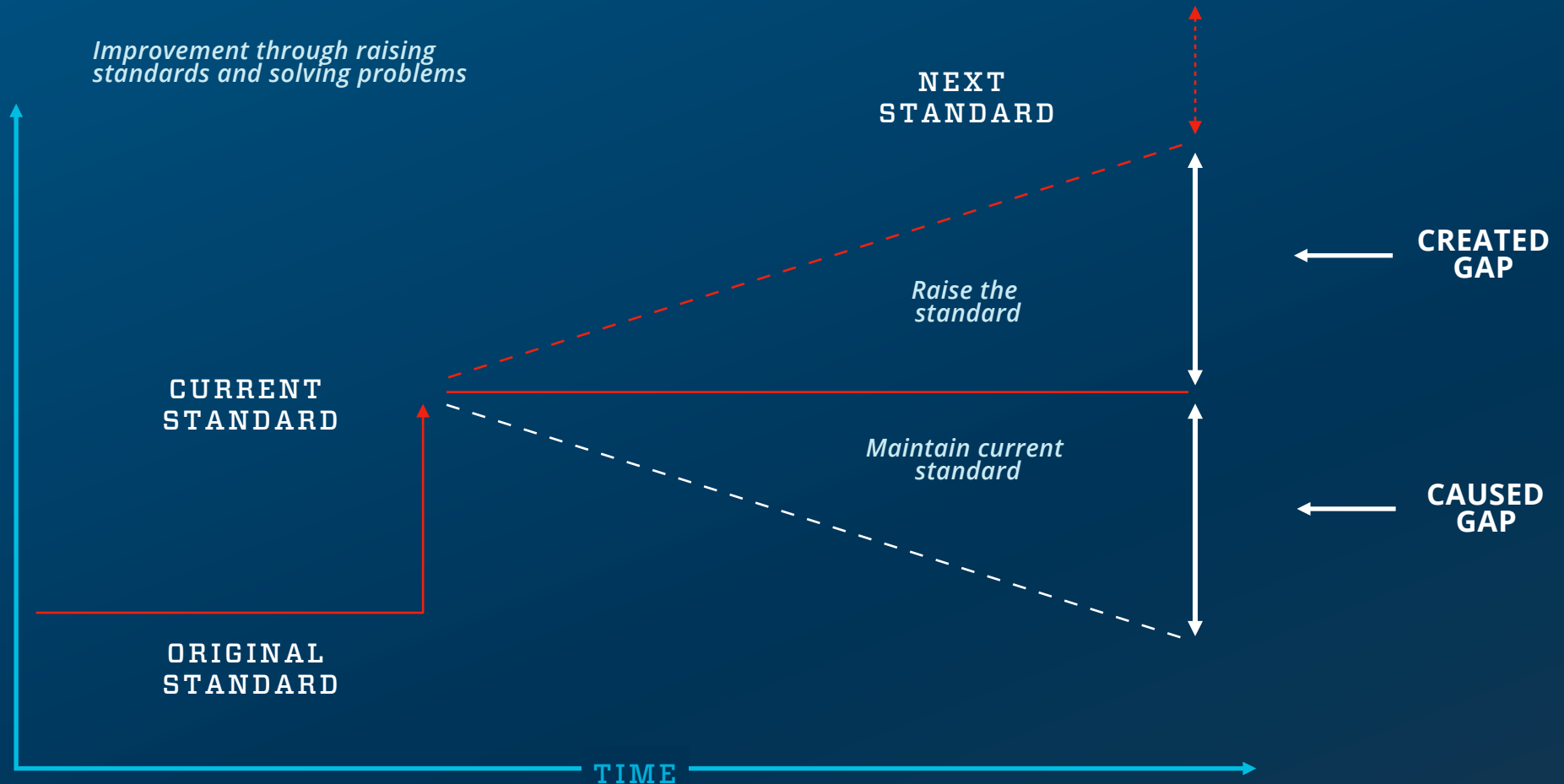




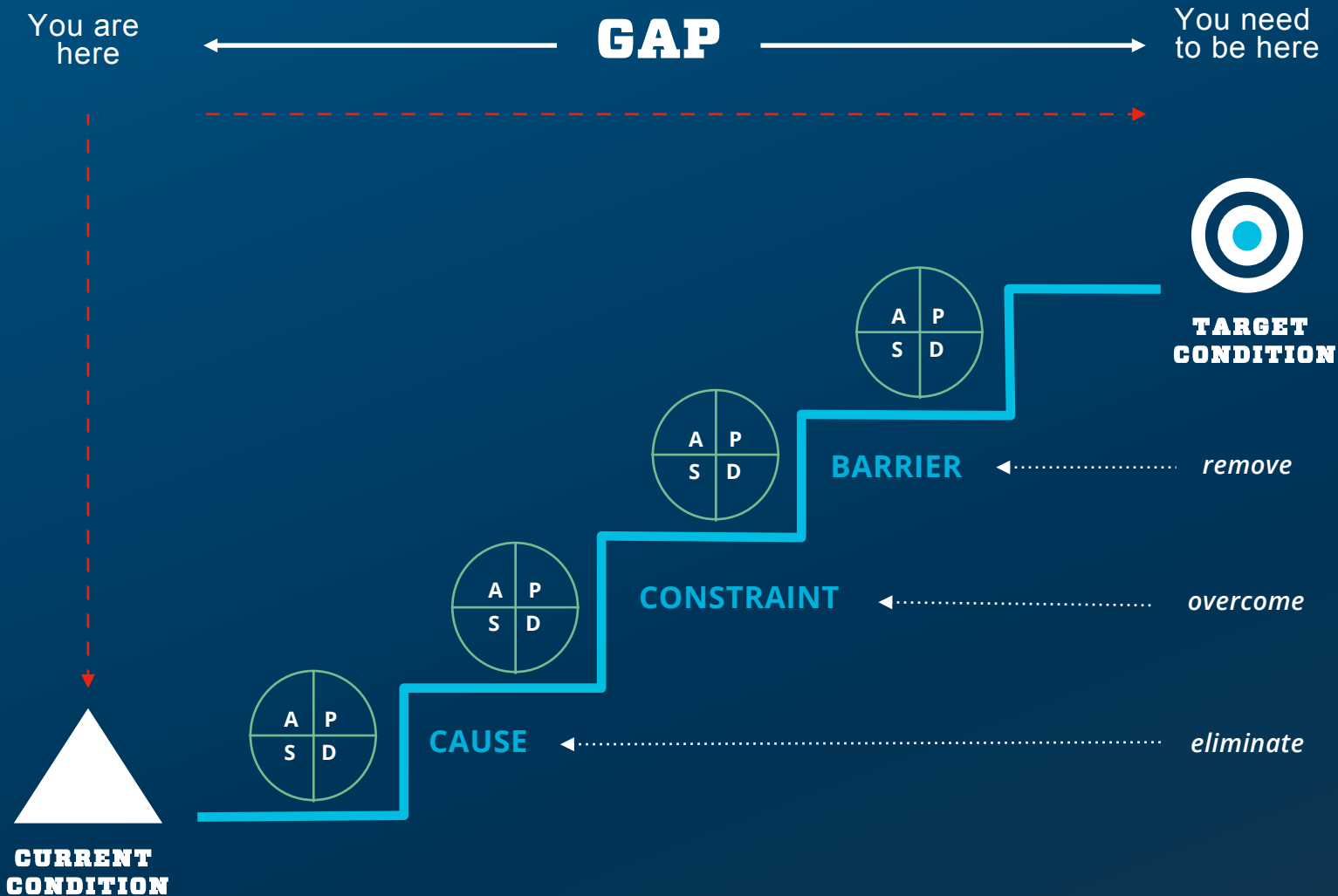
CONTINUOUS IMPROVEMENT

FEA relentlessly pursues IT Flow that yeilds economic value.

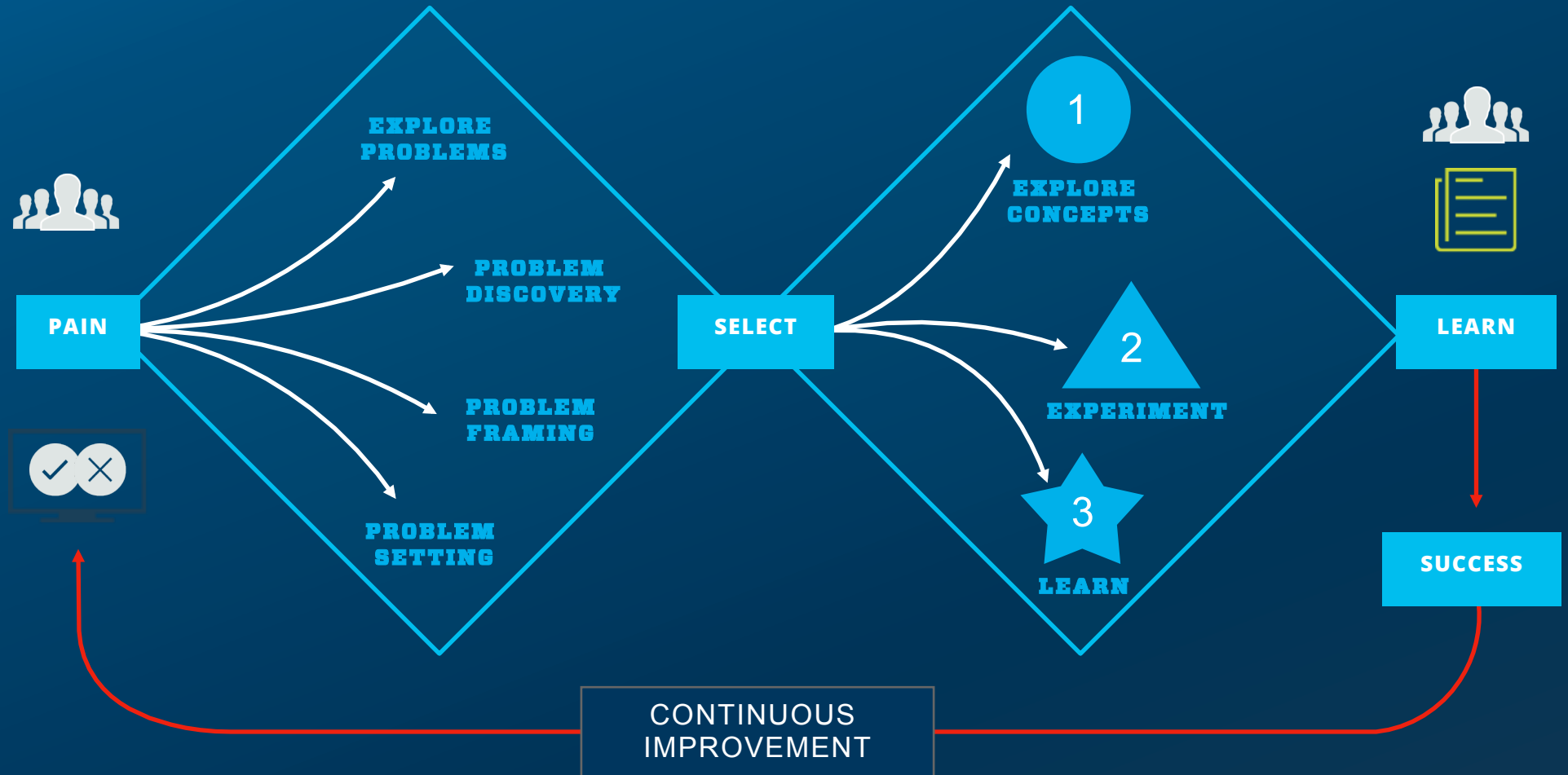
DESIGN THINKING NEW STANDARDS



LEARNING INTO LEAN THINKING



EXPLORE/EXPERIMENT



“The Double Diamond: Strategy + Execution of the Right Solution” <http://buff.ly/1TGRfX2>

A blue-tinted photograph of a forest stream flowing over rocks. The water is white and frothy as it cascades over the dark, jagged rocks. The background shows a dense forest of tall, thin trees.

“

Technology is a benefit if,
and only if, it diminishes a
limitation.

”

— ELI GOLDRATT

THE WALL STREET JOURNAL.

Home World U.S. Politics Economy **Business** Tech Markets Opinion Arts Life Real Estate



CIO JOURNAL.

Johnson & Johnson Targets 85% of Apps in Cloud by 2018

Sequencing genomes, parsing disease pathways and modeling new medical devices is compute-intensive work.

Kim S. Nash, 2016, "Johnson & Johnson Targets 85% of Apps in Cloud by 2018," Wall Street Journal, <http://buff.ly/2fmlnaW>



PRINCIPLES OF CLYDESDALES

- Visualize Your Work, but first, **Visualize Your System!**
- Identify the biggest **constraints** on your system, then apply the five focusing steps.
- Switch from Projects (Temporal Silos), to Strategies (Capability Value Streams)
- Align cross-functional, cross-disciplined teams to Strategies & Enterprise Services
- **Stop** measuring resource efficiency (cost-accounting/activity based accounting), **Start** measuring flow efficiency
- Shape Value and Failure Demand through Human Sensor Networks
- Identifying Asymmetric Bets for Experimentation & Learning

A photograph of a horse running in a field, overlaid with a semi-transparent red filter. The horse is in the center-left of the frame, facing right. The background shows trees and a fence.

**DEVOPS
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THANKS!

Need for Speed: Enabling DevOps Through Enterprise Architecture

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“

The world is not a solid continent of facts sprinkled by a few lakes of uncertainties, but a vast ocean of uncertainties speckled by a few islands of calibrated and stabilized forms.

”

— Bruno Latour