

**ThoughtWorks®**

# **The IT Division Refactored**

'Applying the Toyota Production System to large-scale IT'

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## About Me

### Richard Durnall

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- Project Management.
- Lean & Agile Coaching.
- Strategic & Advisory Consulting.
- Process Analysis.

- Airline.
- Financial Services.
  - Banking (Wholesale & Retail).
  - Insurance.
  - Superannuation.
  - Fund Management & Ratings.
  - Advice & Investment.
- Manufacturing & Supply Chain.
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## Agenda

“The important thing is this: To be able at any moment to sacrifice what we are for what we could become.”

Charles Dubois

- The Problem

- The IT System (PARC)

- The Modern IT Division

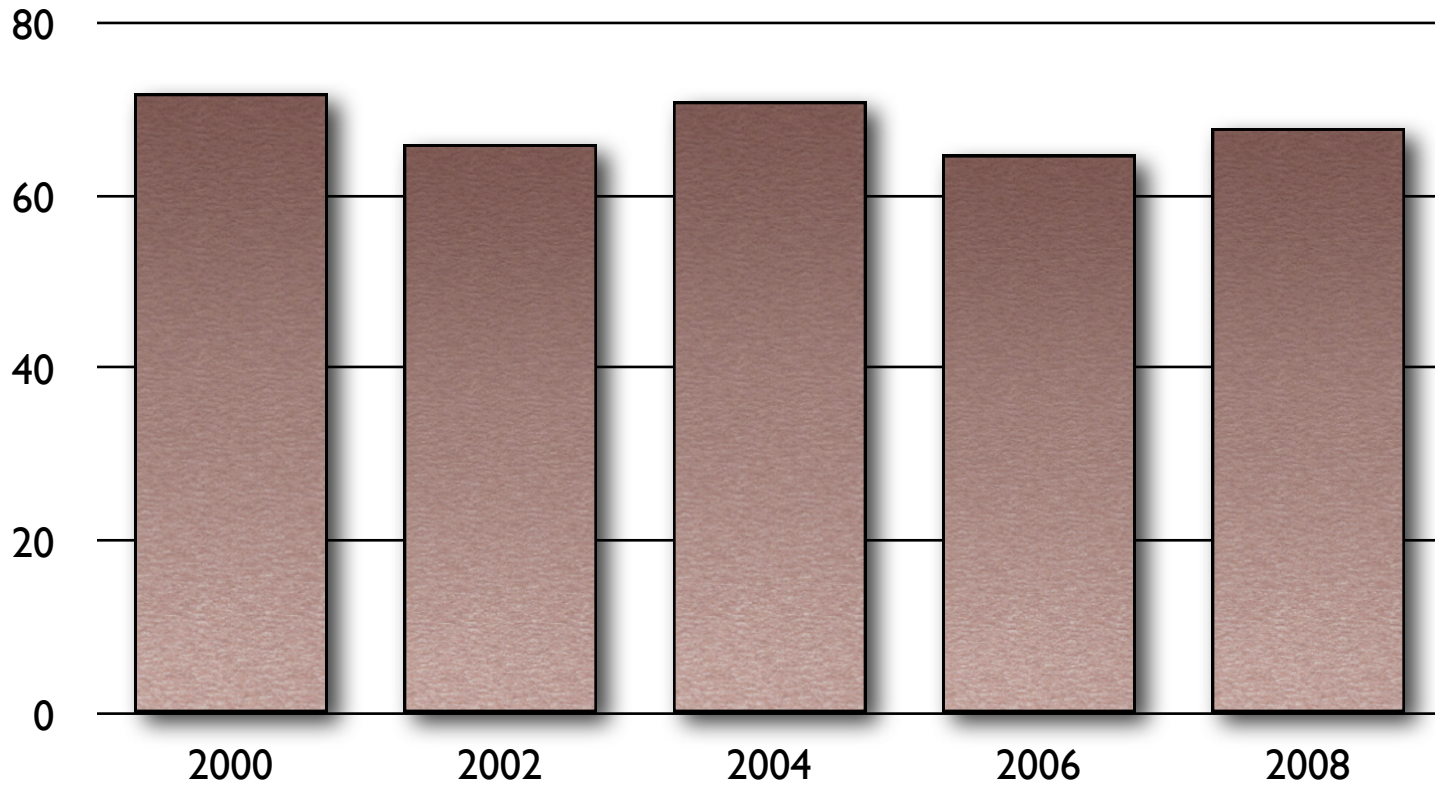
- The IT Division Refactored

- New System, New Problems

The Problem

**The Standish Report CHAOS Data**

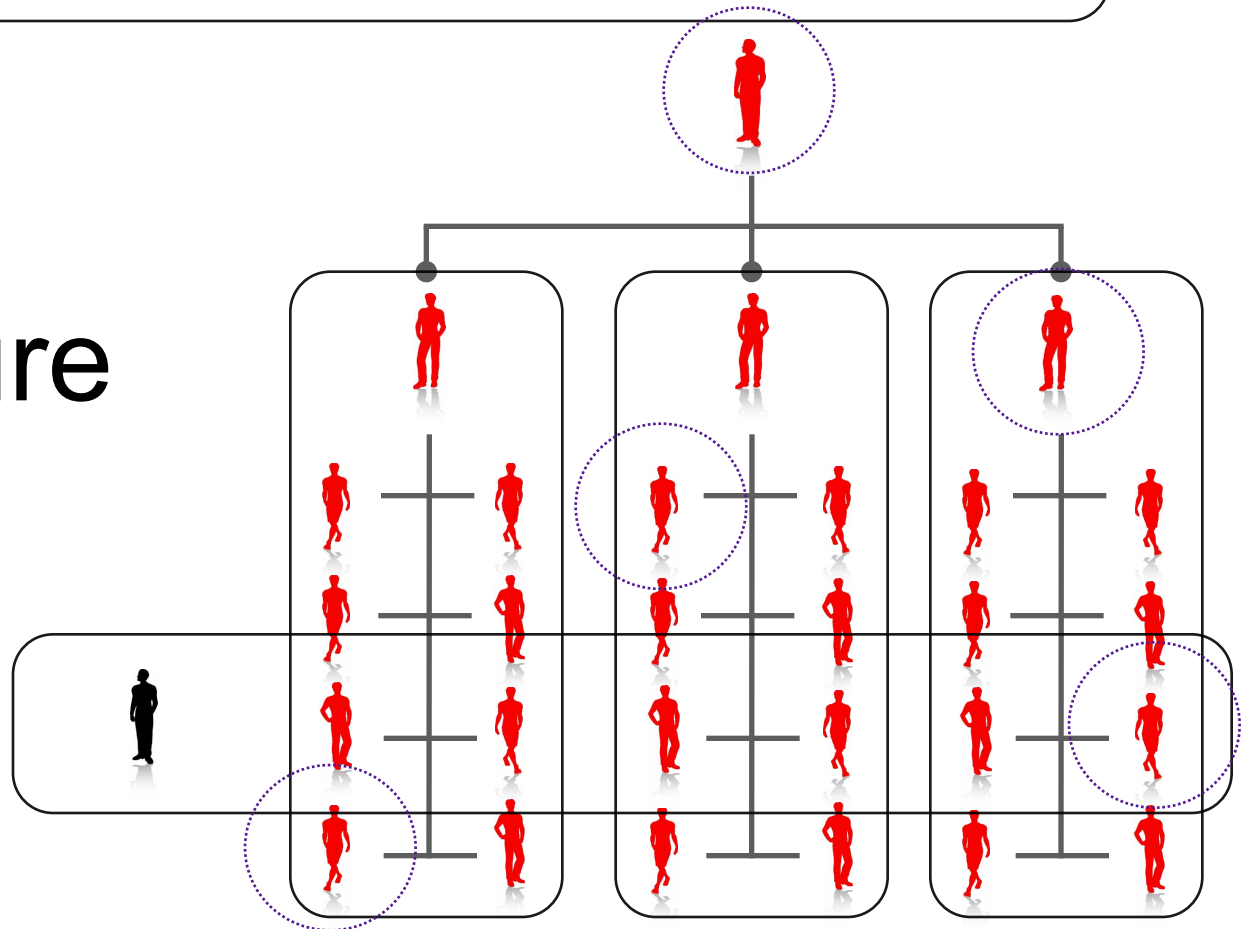
Failed & Marginal Projects : 2000 to 2008



The IT System

PARC Organisational Taxonomy  
The Modern Firm – John Roberts

People  
Architecture  
Routines  
Culture



The Modern IT  
Division

**The History of Management**

The Management Guru – Dr. Edwin Lee Makamson

Pre-Industrial

Industrial Revolution

Capitalism in America

Frederick Winslow Taylor

Management Science

Systems Management Theory



## The Modern IT Division

“History is more or less bunk!”

Henry Ford



Structures that were pioneered to drive a hard days work from 12 year-old boys in sweat-shops in the North of England...



...and reached their pinnacle when applied by Henry Ford to manage thousands of uneducated Americans in the mass production of motor cars.

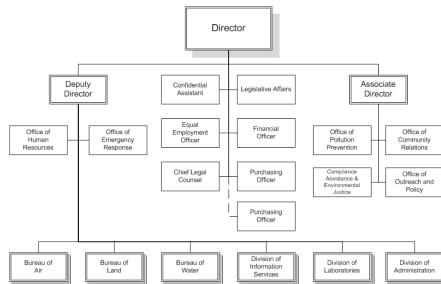


## The Modern IT Division

“History is more or less bunk!”

Henry Ford

A model that prioritises the ease of management of the individual over the value delivered to the customer...

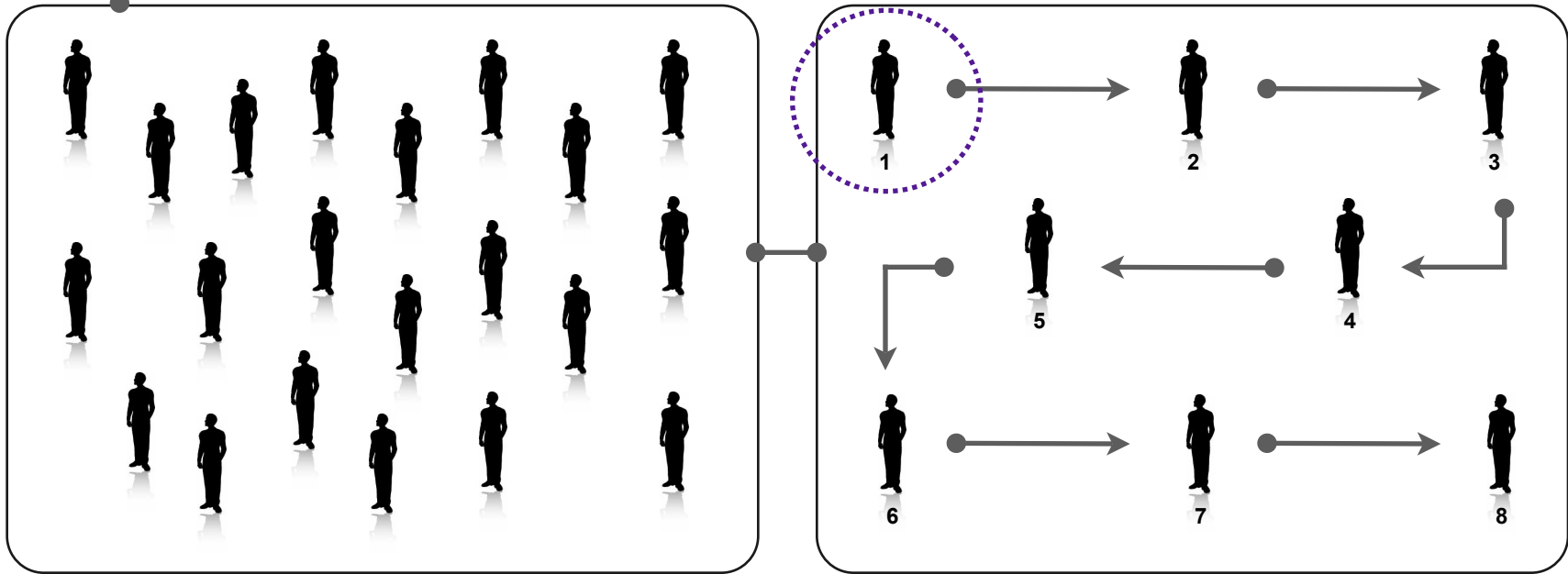


...that fails to deal with the challenges of modern business and has been known to be inefficient since the 1960's.

How?

## Information Cascades

The Wisdom of Crowds – James Surowiecki



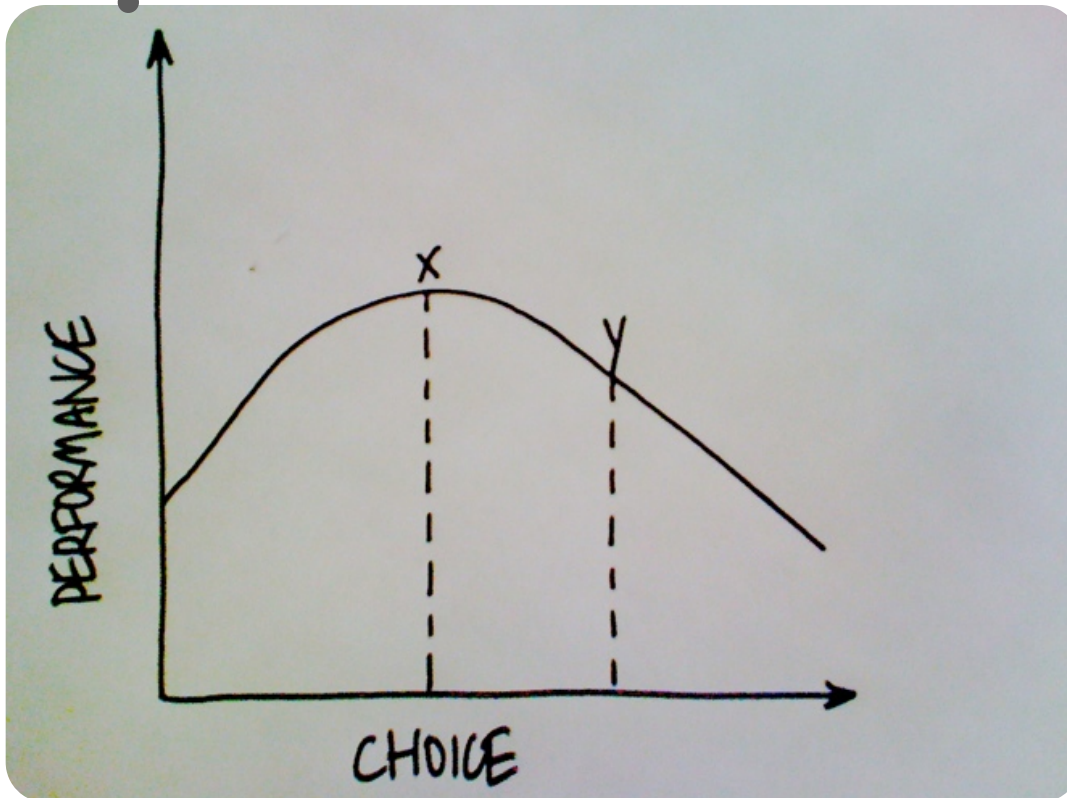
“Wordly wisdom teaches that it is better to fail conventionally, than to succeed unconventionally.”

John Maynard Keynes

The Case for  
Change

## The Customer-Centric Adaptive Organisation

The Modern Firm – John Roberts



## Choices vs. Performance

The graph assumes:

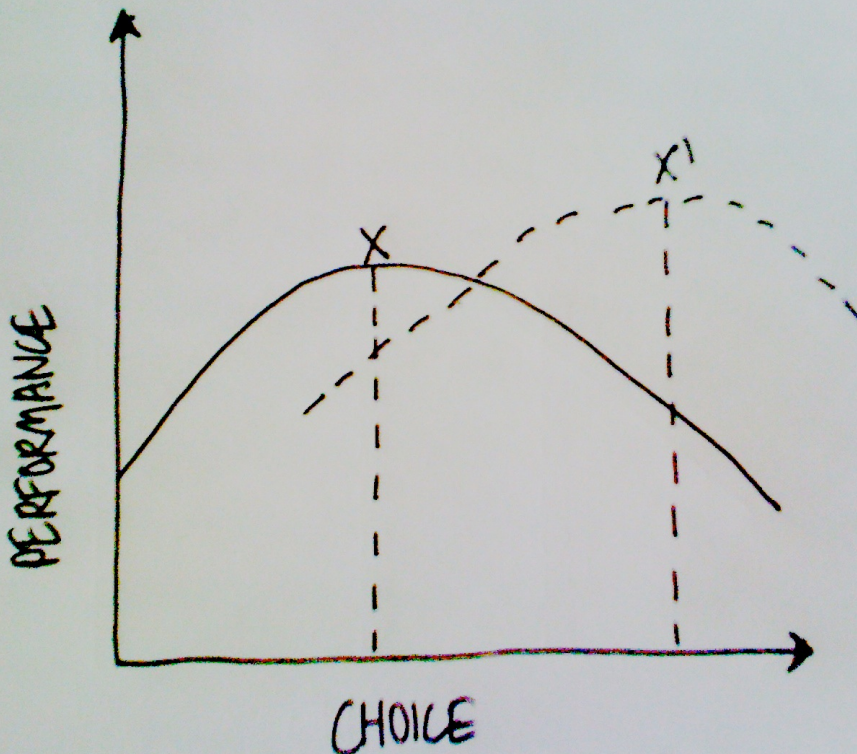
- A static curve.
- A single optimisation (x)

(2D simplification of reality)

The Case for  
Change

## The Customer-Centric Adaptive Organisation

The Modern Firm – John Roberts



## Choices vs. Performance

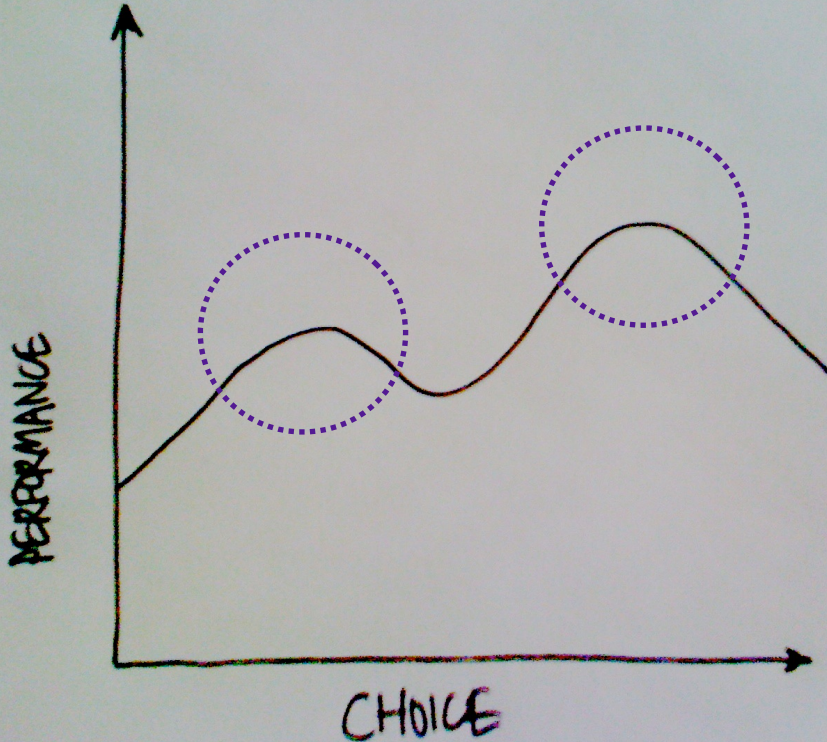
Our choice/performance options change over time due to changing:

- Technology
- Competitors
- Markets
- People
- Customers

The Case for  
Change

## The Customer-Centric Adaptive Organisation

The Modern Firm – John Roberts



## Choices vs. Performance

There may be more than one  
optimisation available to us.

## The Alternative

### Systems Management Theory

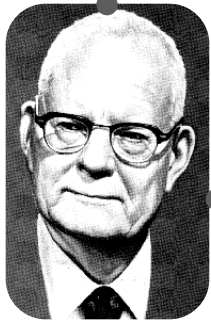
Frederick Winslow Taylor – Scientific Management

W. Edwards Deming – Out of the Crisis



“It is only through *enforced* standardization of methods, *enforced* adoption of the best implements and working conditions and *enforced* cooperation that this faster work can be assured. And the duty of *enforcing* the adoption of standards and *enforcing* this cooperation rests with management alone.”

Frederick Winslow Taylor



“All anyone asks for is a chance to work with pride.”

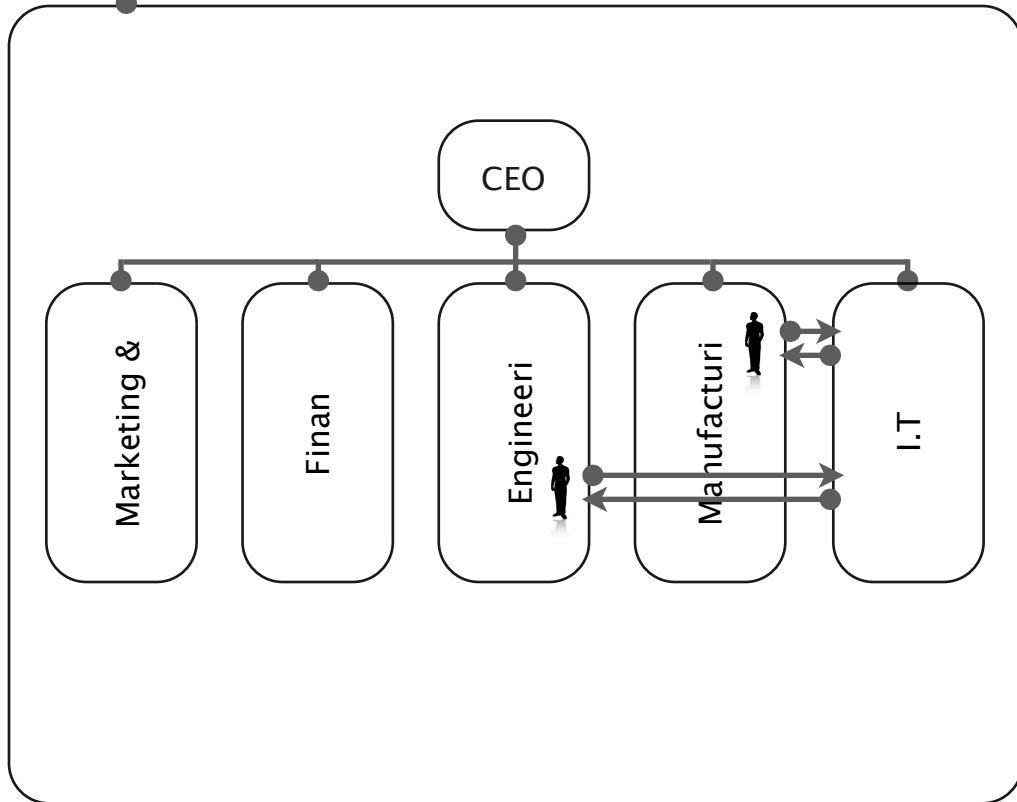
“A bad system will beat a good person every time.”

W. Edwards Deming

The IT  
Division  
Refactored

### The IT Division Refactored

'Applying the Toyota Production System to the IT division'



### IT Division Refactored

Maintain commitment to deliver strategy.

Redesign the internal 'workings' of the IT division based on a systems model.

“First we build people, then we build cars”.

Toyota

People

Hiring Policies & Processes

- Competencies & Capabilities
- Cultural Fit
- Appetite & Ability to Learn

Personal Development

- Internal Academies & Universities
- Coaching & Training

Community Involvement

- Support for User Groups & Conferences
- Supports Recruitment



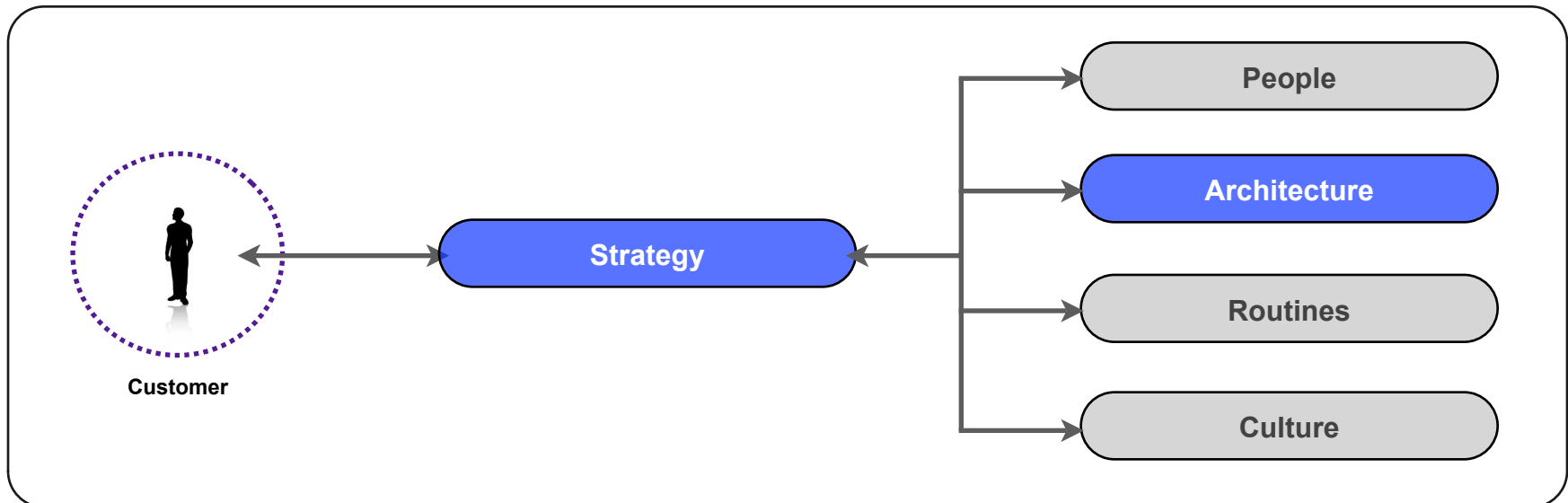
“A bad system will beat a good person every time.”

W. Edwards Deming

Architecture  
(Structure)

What is the purpose of the organisational structure?...

To deliver company strategy as effectively as possible.



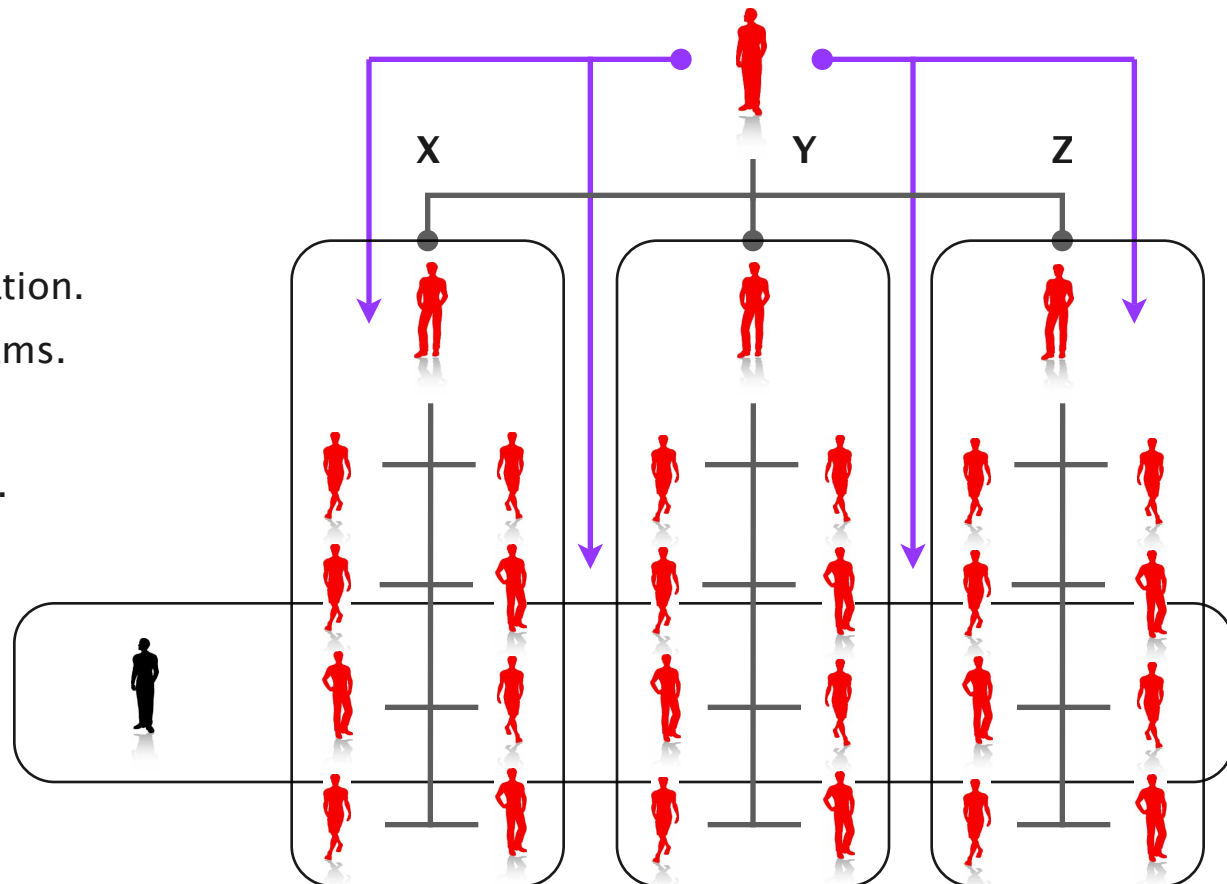
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Architecture  
(Structure)

## Inside-Out

- (1) Start at the top.
- (2) Appoint managers by specialisation.
- (3) Allocate people to divisions/teams.
- (4) Communicate a strategy.
- (5) Determine performance targets.
- (6) Define the delivery process.
- (7) Engage the customer.



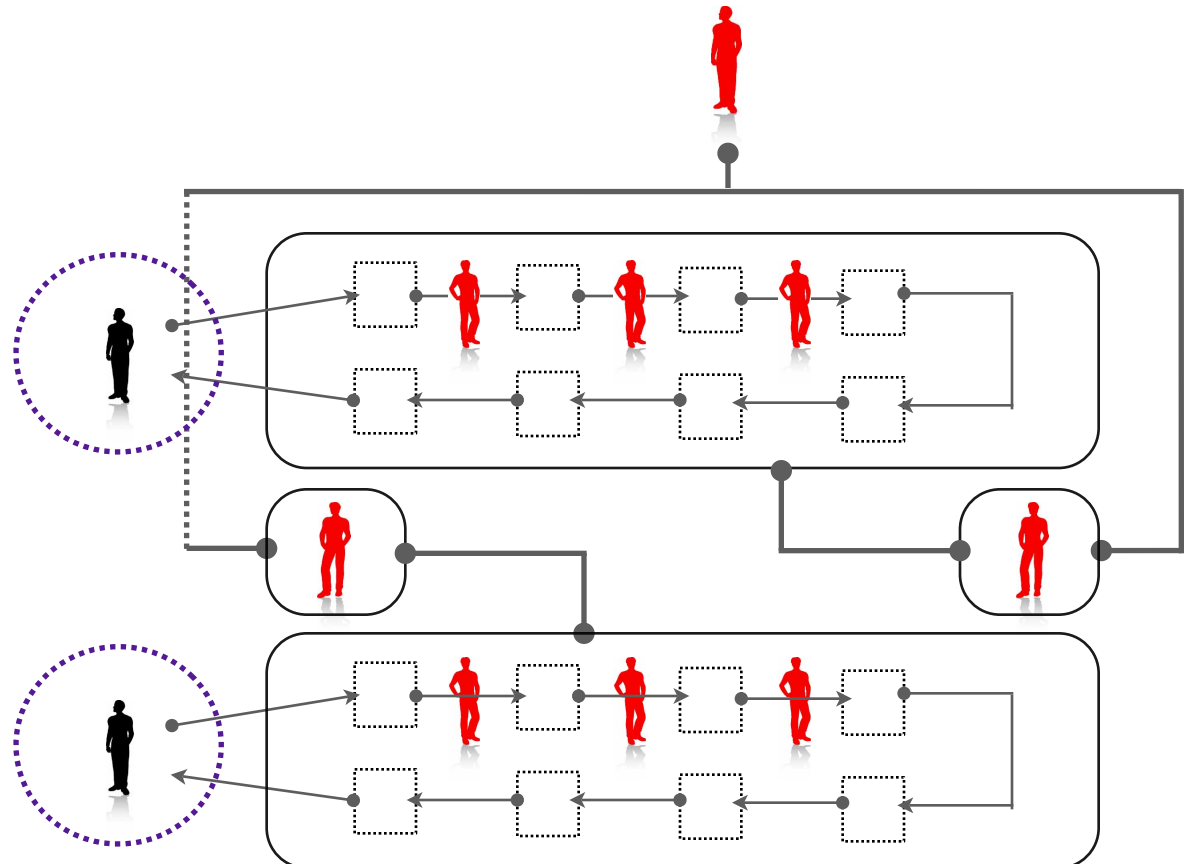
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Architecture  
(Structure)

## Outside-In

- (1) Start with the customer.
- (2) Develop a strategy.
- (3) Design initial processes.
- (4) Define process metrics.
- (5) Structure to support processes.
- (6) Appoint process managers.
- (7) End at the top.
- (8) Adapt & Improve.

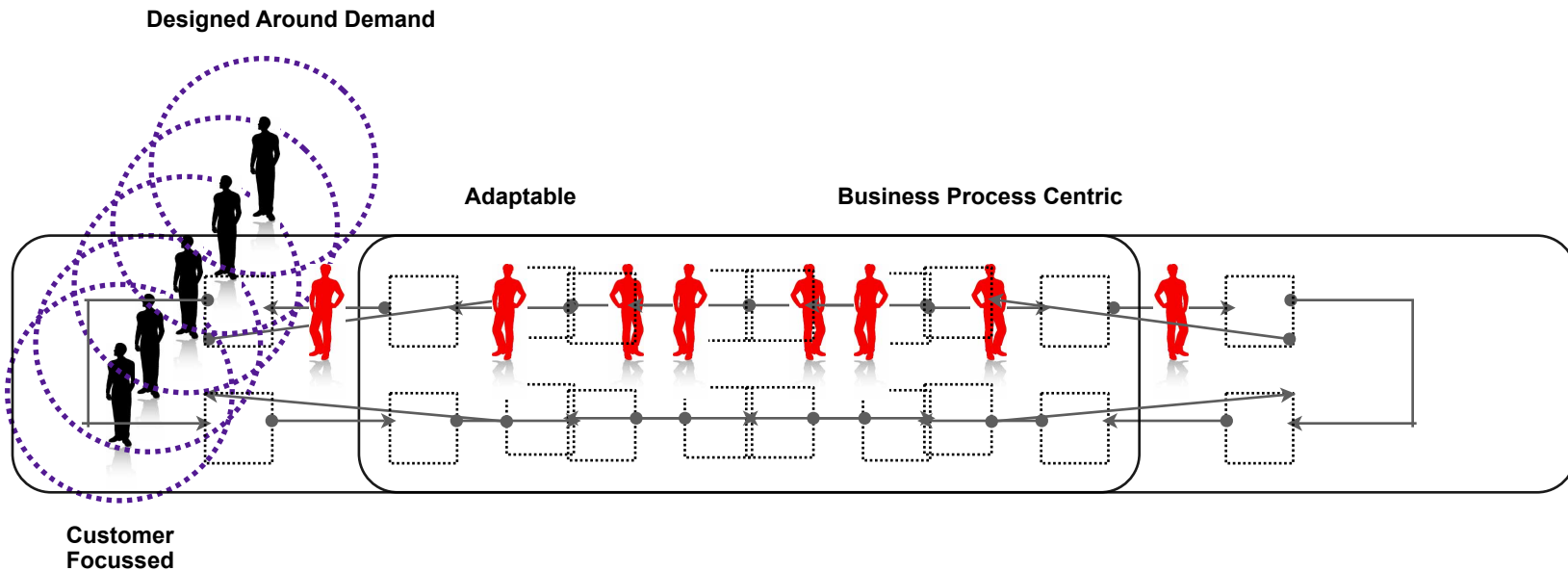


Architecture  
(Structure)

“A bad system will beat a good person every time.”

W. Edwards Deming

The customer-centric adaptive organisation is...



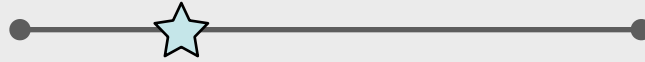
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Architecture  
(Structure)

Architecture Trade-Offs

Customer Focus



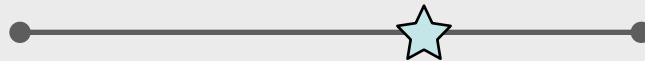
Ease of People Management

Process Efficiency



Individual Accountability

Adaptability



Control

Ability to Scale

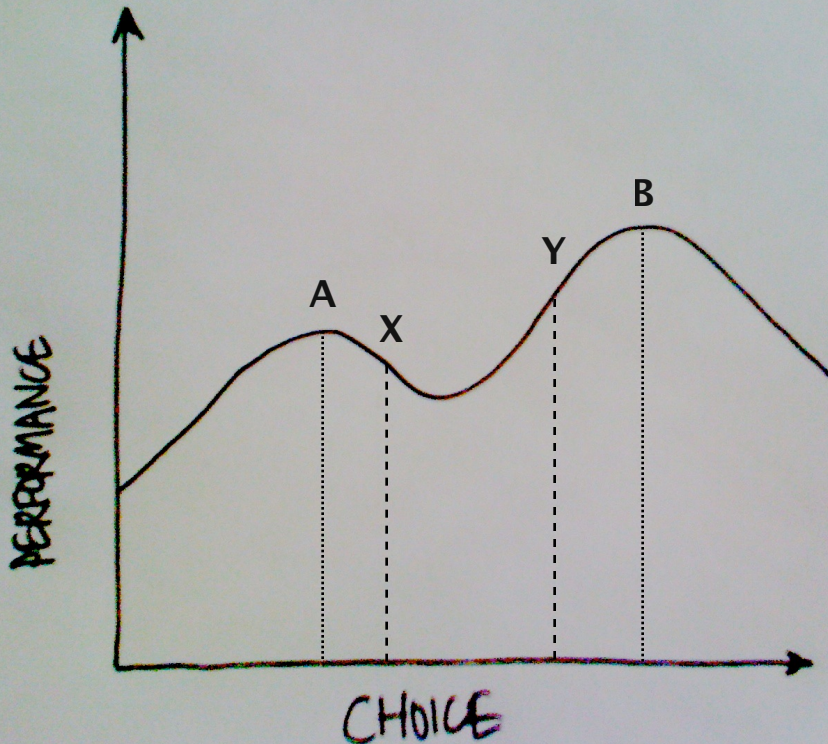


Cultural Consistency

“A bad system will beat a good person every time.”

W. Edwards Deming

Architecture  
(Structure)



## Kaizen vs. Kaikaku

Kaizen :: Continuous improvement to eliminate waste.

Kaikaku :: Radical overhaul to eliminate waste. Also called 'breakthrough kaizen'.

“A bad system will beat a good person every time.”

W. Edwards Deming

Architecture  
(Structure)

## Case Study 1 - Service Based Operating Model

Industry	Financial Services
Scale	~3600+ in IT, 25,000 in business
Duration of Transformation	Multi-Year (In flight)
Geography	Australia, Multiple Cities
Sponsor	CIO
Approach	All in, all at once
Impact	\$200M Cost Savings
Notes	Agile Academy, Decentralised PMO, Service Structure

“A bad system will beat a good person every time.”

W. Edwards Deming

Architecture  
(Structure)

## Case Study 2 - Consolidated Operating Model

<b>Industry</b>	Financial Services
<b>Scale</b>	~200 in IT
<b>Duration of Transformation</b>	6-Months (In Flight)
<b>Geography</b>	Australia, Multiple Cities
<b>Sponsor</b>	CIO
<b>Approach</b>	Staged, Incremental
<b>Impact</b>	Reduced IT cost by ~40%
<b>Notes</b>	Service Structure, Removed PMO, Simplified Portfolio



“It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change.”

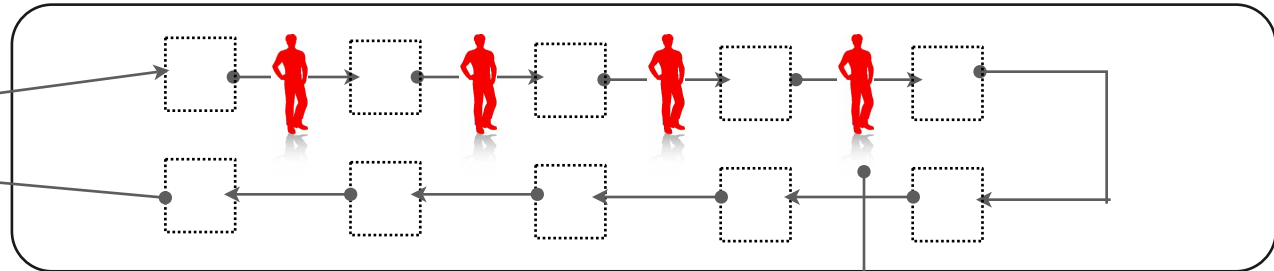
Charles Darwin

Routines  
(Processes)

Business Process

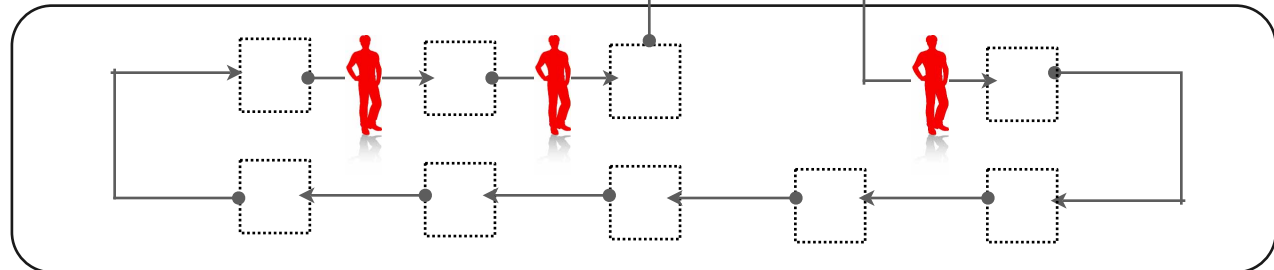


Customer



IT System(s)

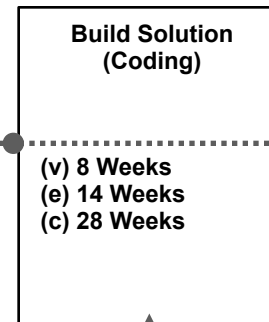
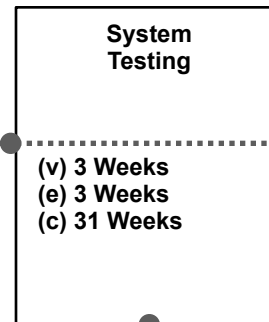
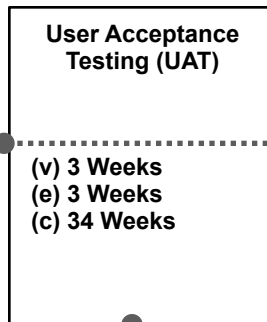
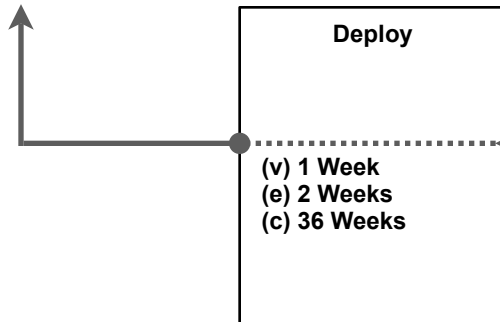
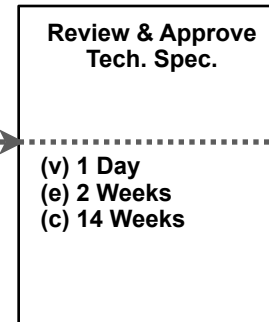
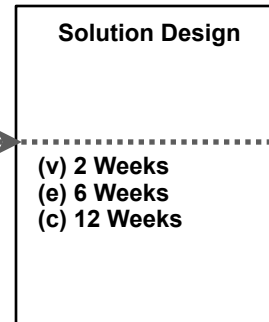
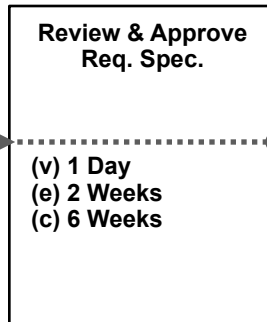
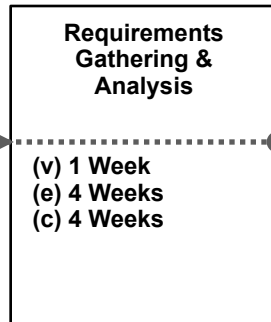
Software Delivery Process



Routines  
(Processes)

“It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change.”

Charles Darwin

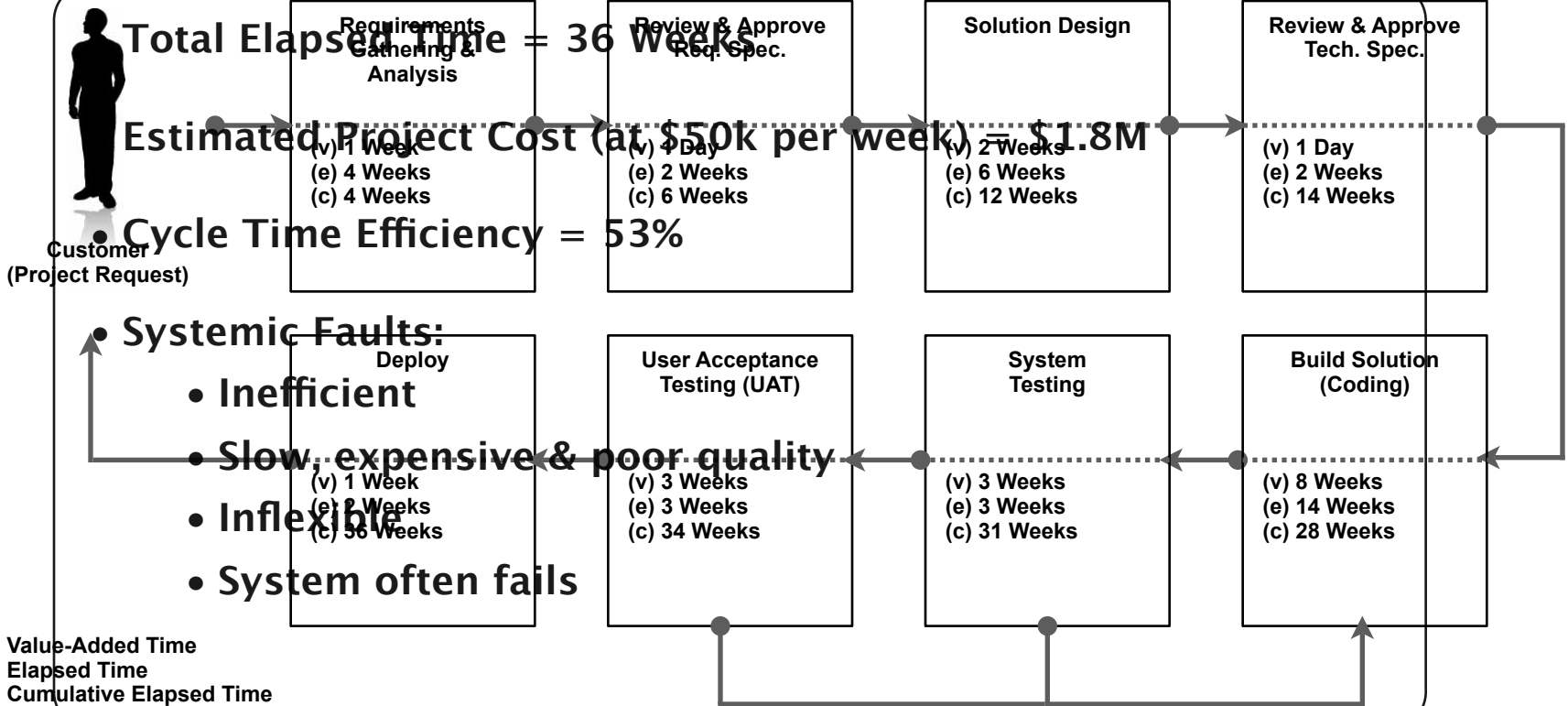


(v) Value-Added Time  
(e) Elapsed Time  
(c) Cumulative Elapsed Time

Routines  
(Processes)

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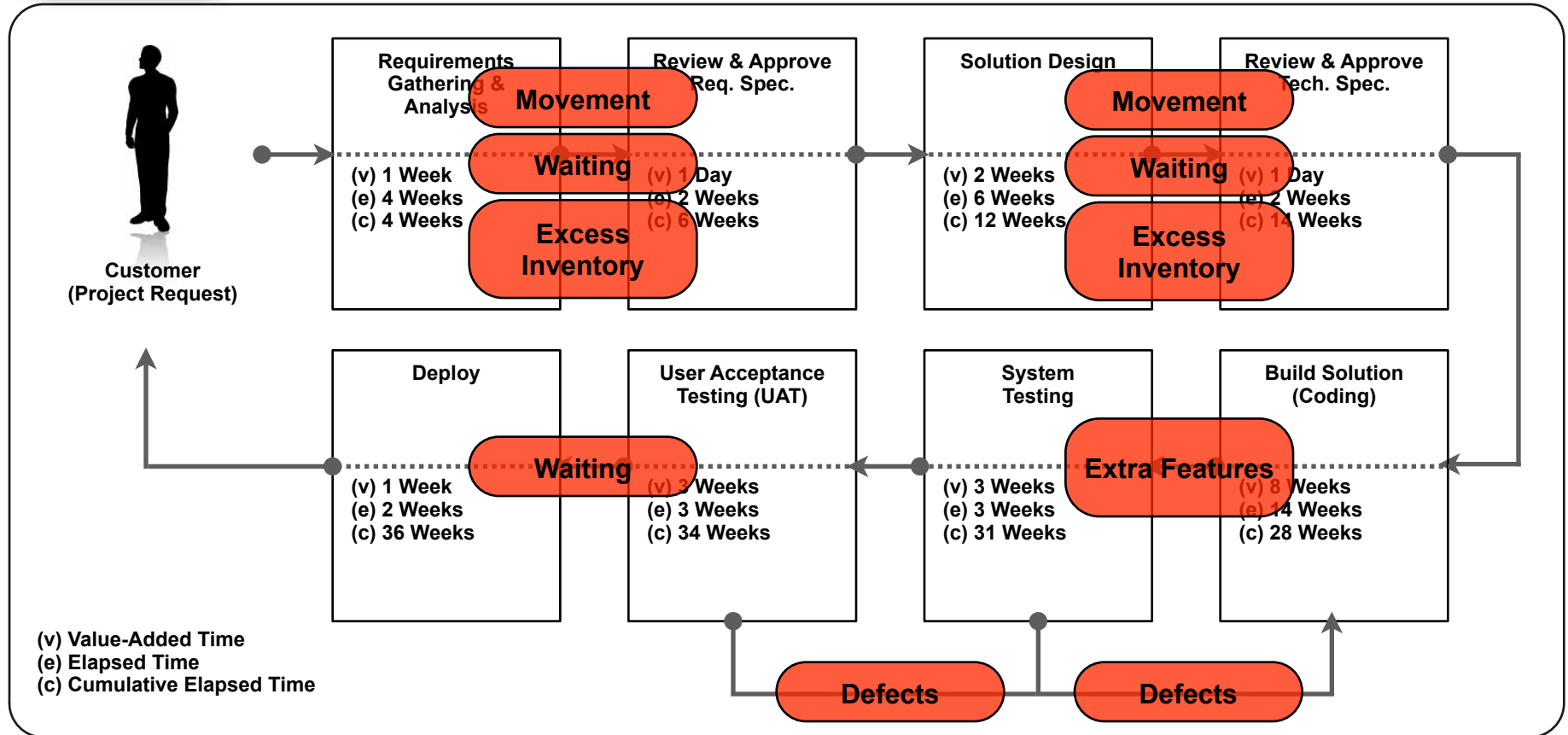
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Routines  
(Processes)

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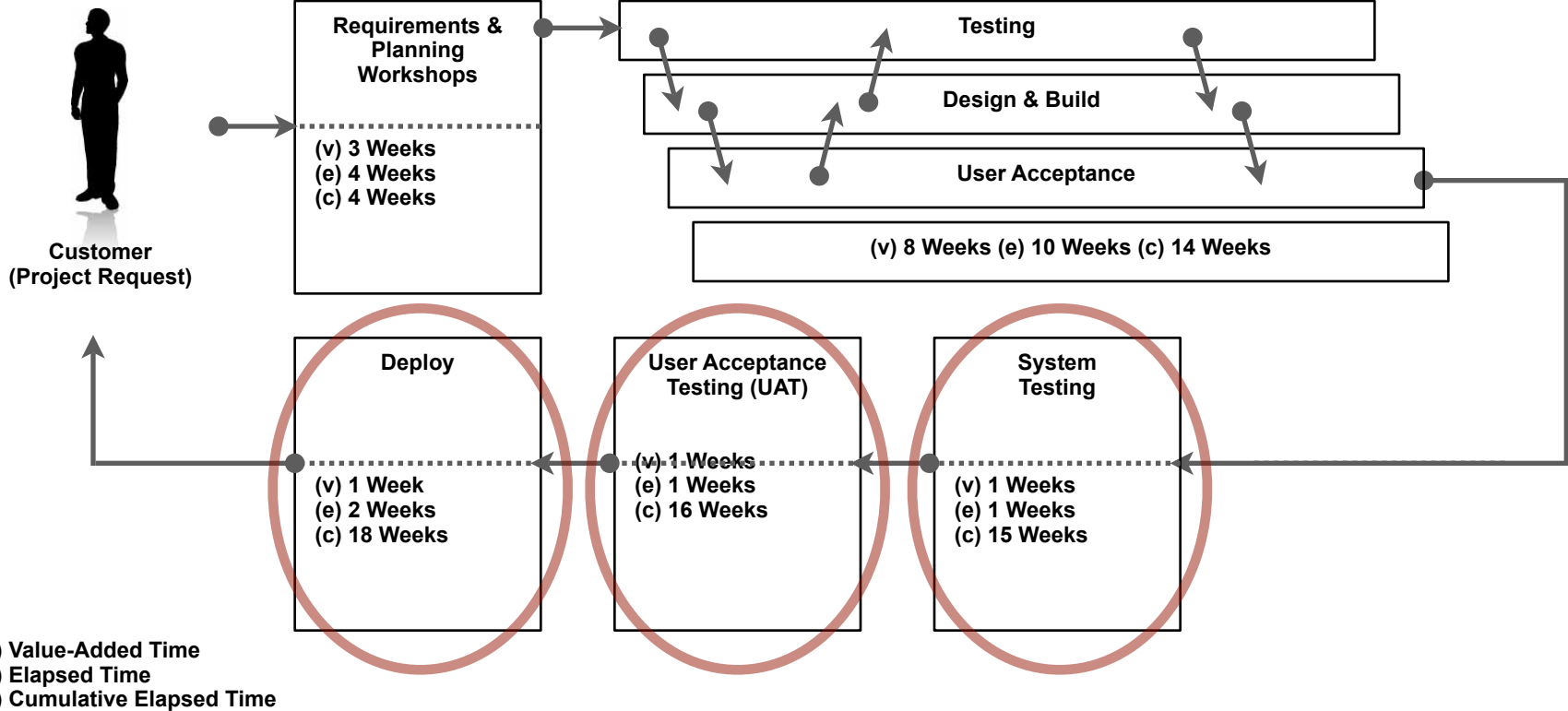
Charles Darwin



Routines  
(Processes)

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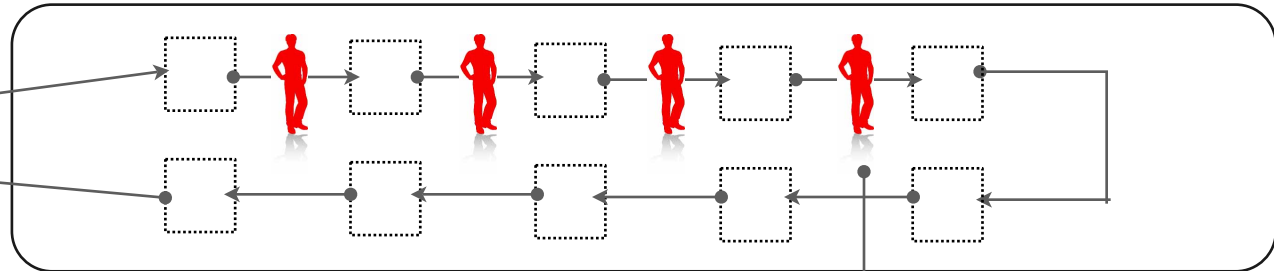
Charles Darwin

Routines  
(Processes)



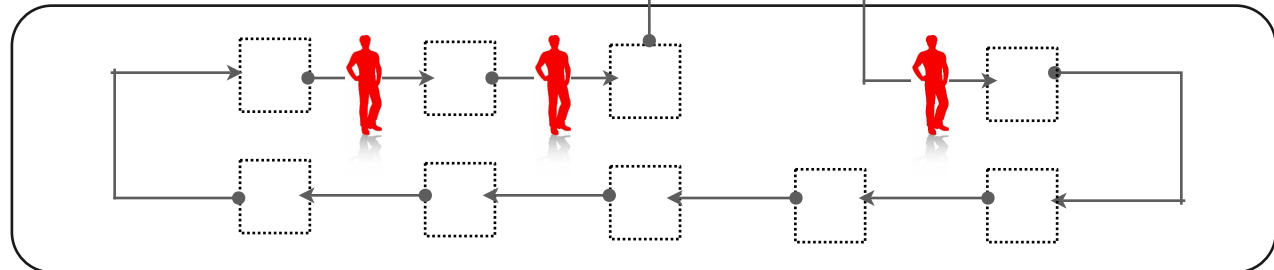
Customer

Business Process



IT System(s)

Software Delivery Process

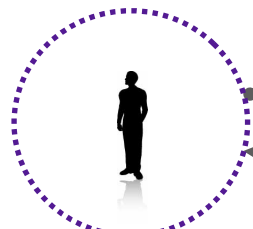


Routines  
(Processes)

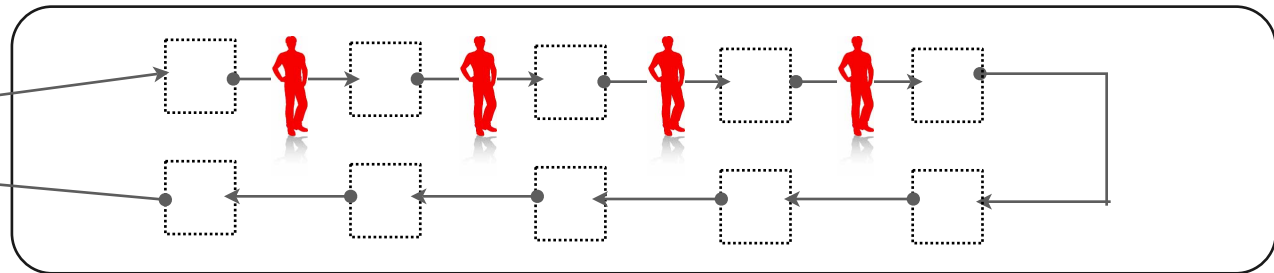
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Business Process

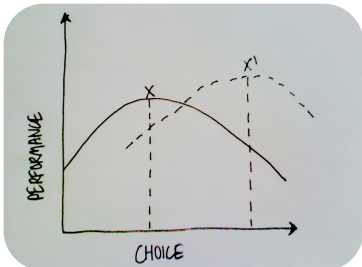


Customer



IT System(s)

- (1) Improve the process first. Then automate.
- (2) Allow for change. IT systems are corporate concrete.



Routines  
(Processes)

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Charles Darwin

## Case Study 3 - Fixing the Value Stream

“IT is still too slow.”

- 19 customers.
- 76 day cycle time.
- 15 day development cycle.

“We’re trying to improve the wrong things.”



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Charles Darwin

Routines  
(Processes)

Strategic Leadership

Operational Management

Operational Processes

Agile Methods

Systems Management Theory  
(Lean Thinking)

Routines  
(Processes)

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Charles Darwin

Combining Agile and Systems Management Theory (Lean Thinking) provides us with a complete framework for applying the TPS to the IT Division.

Systems Management Theory resolves the challenge of how to do Agile at scale (Enterprise Agility).

Culture

**Systems Management Theory**

The Fifth Discipline – Peter Senge

How I Learned to let my Workers Lead – Robert Stayer

	Command and Control	Systems Management Theory
Focus	Hierarchy	Customer
Economies	of Scale	of Flow
Managers	manage People	manage Processes
Structure	Inside-Out	Outside-In
Metrics	Individual Targets	Process Measures
Accounting	Cost Based	Value Based
Reduce	Downtime	Waste
View	Silo Based	End-to-End (Systemic)
Optimise	Ease of Management	Adaptability
Culture	Maintain Status Quo	Continuous Improvement

Culture

## Moon Shots for Management

Harvard Business Review – February 2009

35 leading thinkers (Columbia, Harvard, McKinsey, CEO's)

- (1) Ensure that the work of management serves a higher purpose.
- (2) Fully embed the ideas of community and citizenship in management systems.
- (3) **Reconstruct management's philosophical foundations.**
- (4) **Eliminate the pathologies of formal hierarchies.**
- (5) Reduce fear and increase trust.
- (6) **Reinvent the means of control.**
- (7) **Redefine the work of leadership.**
- (8) Expand and exploit diversity.
- (9) **Reinvent strategy making as an emergent process.**
- (10) **De-structure and disaggregate the organisation.**
- (11) **Dramatically reduce the pull of the past.**
- (12) **Share the work of setting direction.**
- (13) **Develop holistic performance measures.**

Culture

## Moon Shots for Management

Harvard Business Review – February 2009

35 leading thinkers (Columbia, Harvard, McKinsey, CEO's)

- (14) **Stretch executive timeframes and perspectives.**
- (15) **Create a democracy of information.**
- (16) **Empower the renegades and disarm the reactionaries.**
- (17) **Expand the scope of employee autonomy.**
- (18) Create internal markets for ideas, talent and resources.
- (19) Depoliticise decision making.
- (20) Better optimise trade-offs.
- (21) Further unleash human imagination.
- (22) Enable communities of passion.
- (23) Retool management for an open world.
- (24) Humanise the language and practice of business.
- (25) **Retrain managerial minds (Systems Thinking).**

Culture

“We are here to make another world.”

W. Edwards Deming

**Systems thinking bad smells...**

**“A story costs \$2500. Finance says that anything over 20 points requires a business case.”.**

**“Each developer has a target of delivering 5 points per iteration.”.**

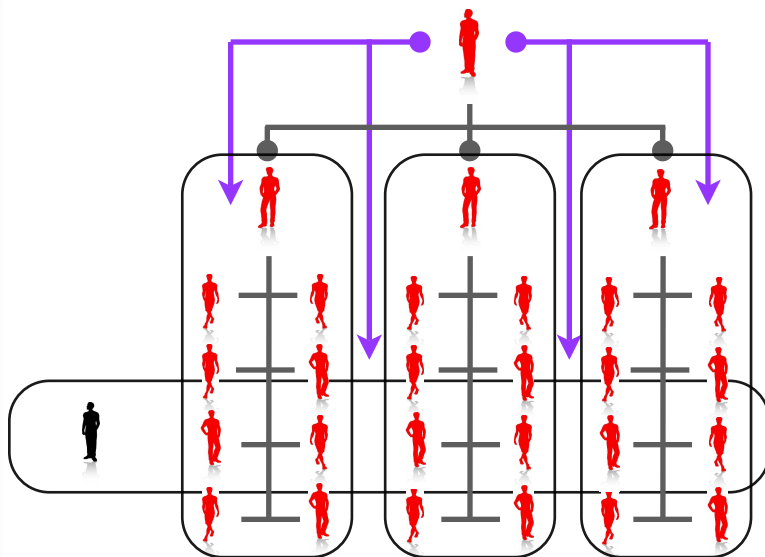
**“The hole is on your side of the boat.”.**

“Everyone thinks of changing the world but no-one thinks of changing himself.”

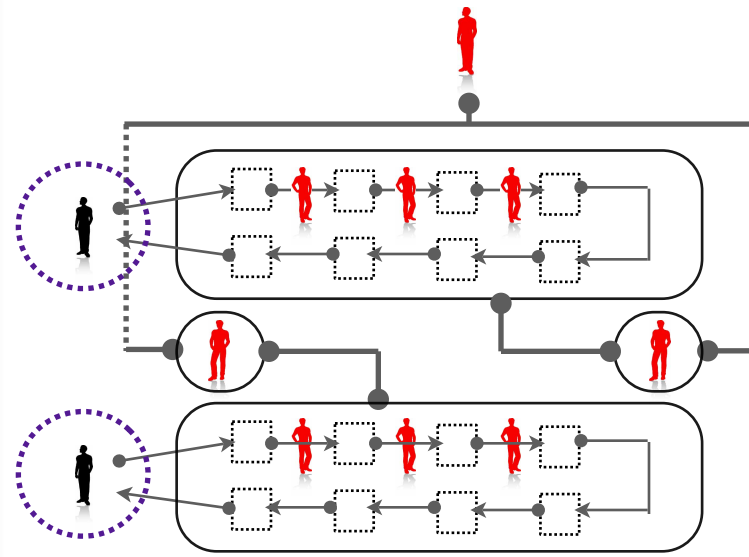
Leo Tolstoy

New System,  
New  
Problems

Strategy & Policy Deployment



The Balanced Scorecard



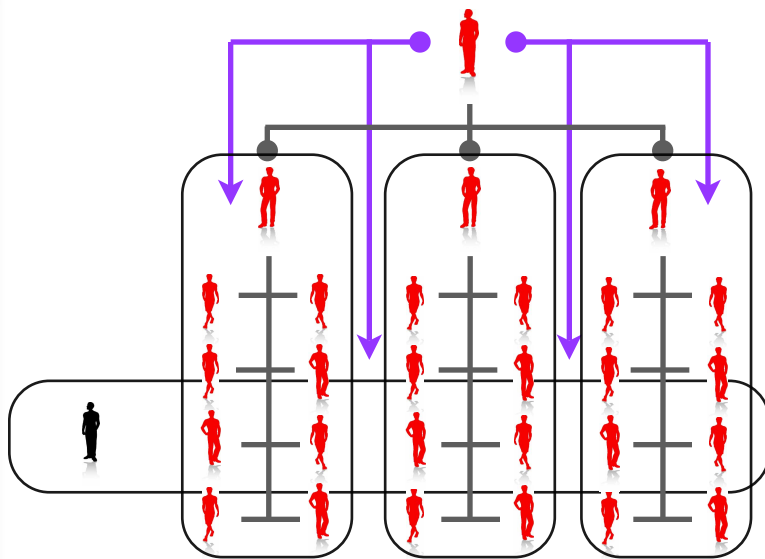
Hoshin Kanri

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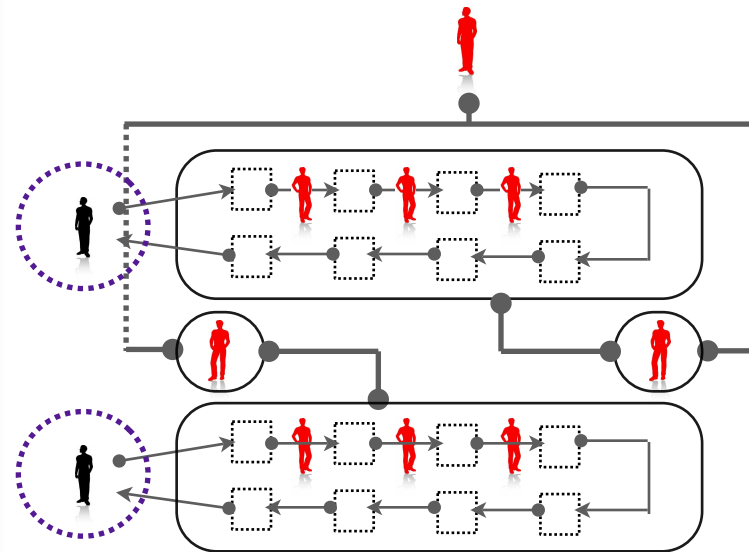
Leo Tolstoy

New System,  
New  
Problems

## Accounting Practices



Cost Accounting



Throughput Accounting

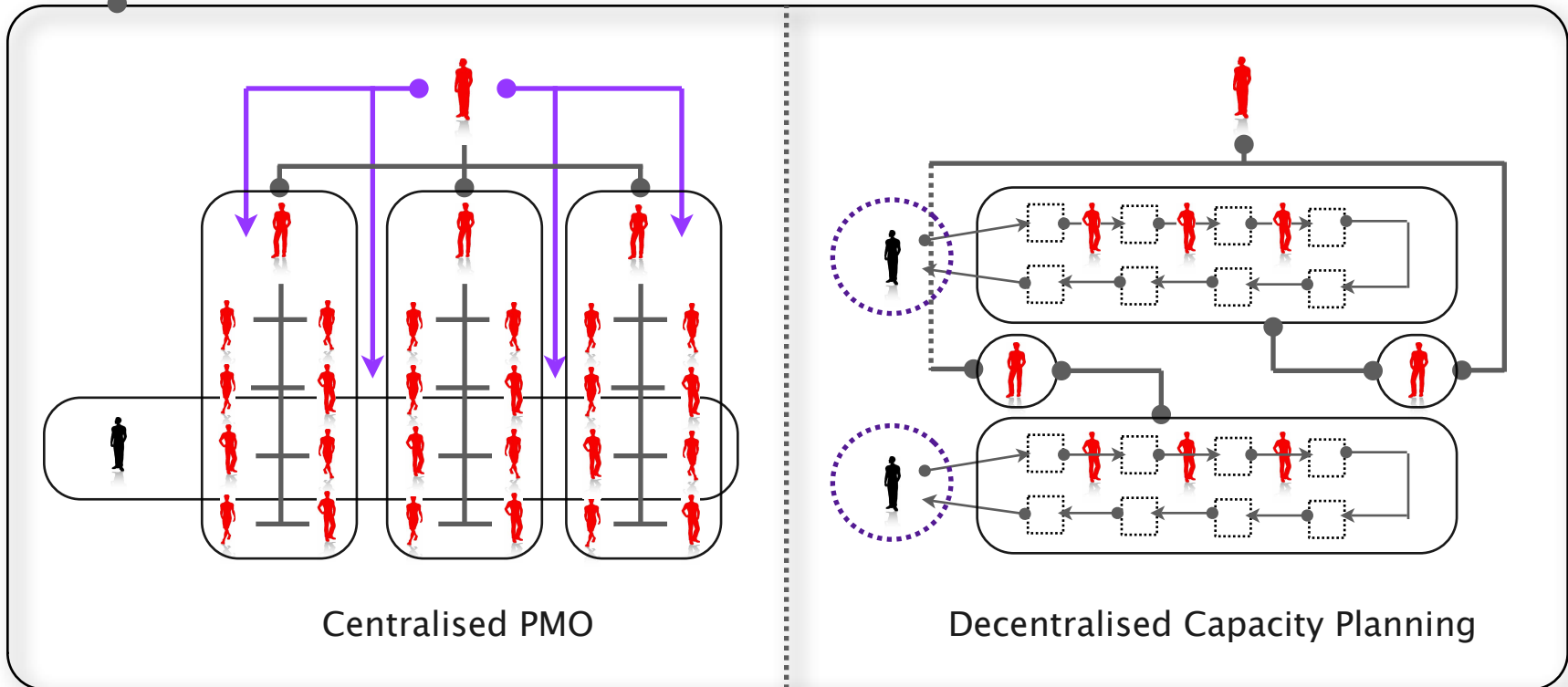


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New System,  
New  
Problems

### Demand Forecasting & Resource Planning

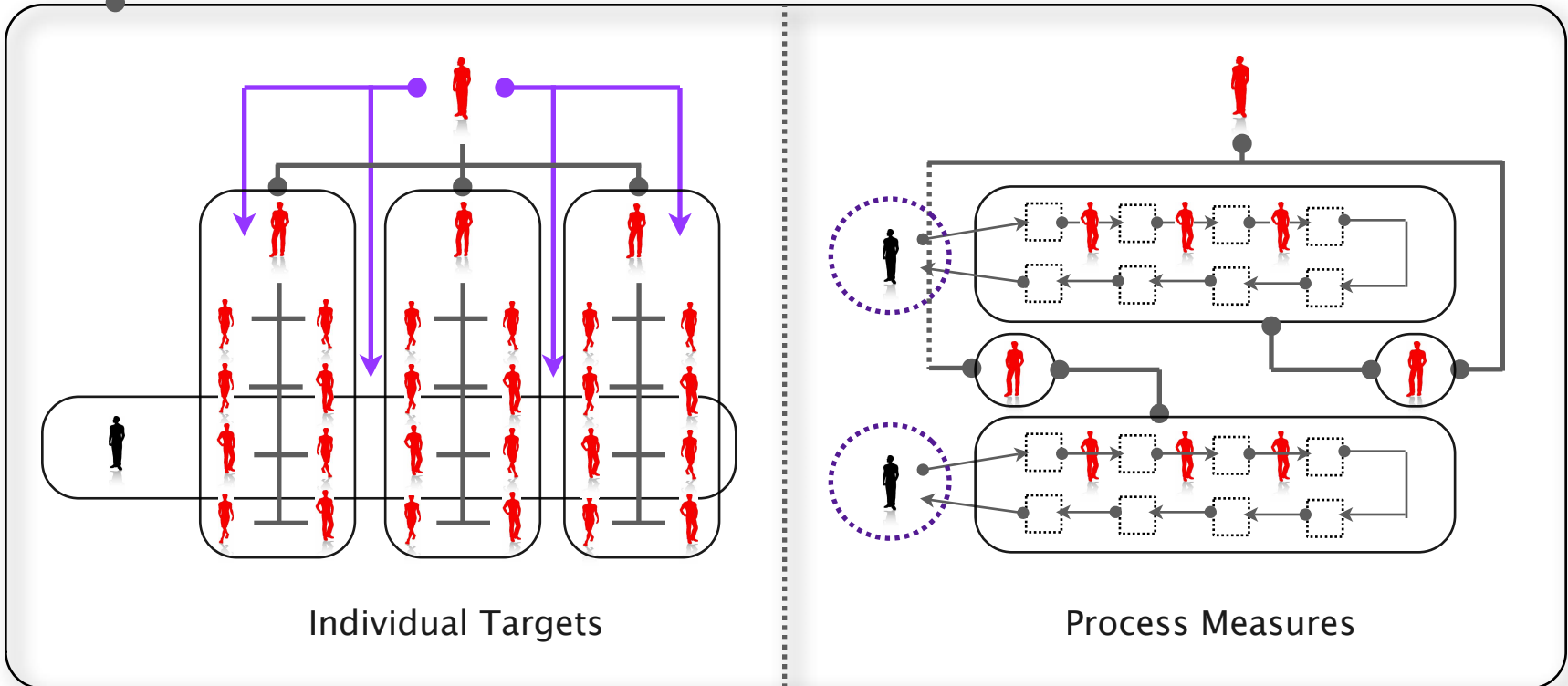


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New System,  
New  
Problems

Performance Incentives

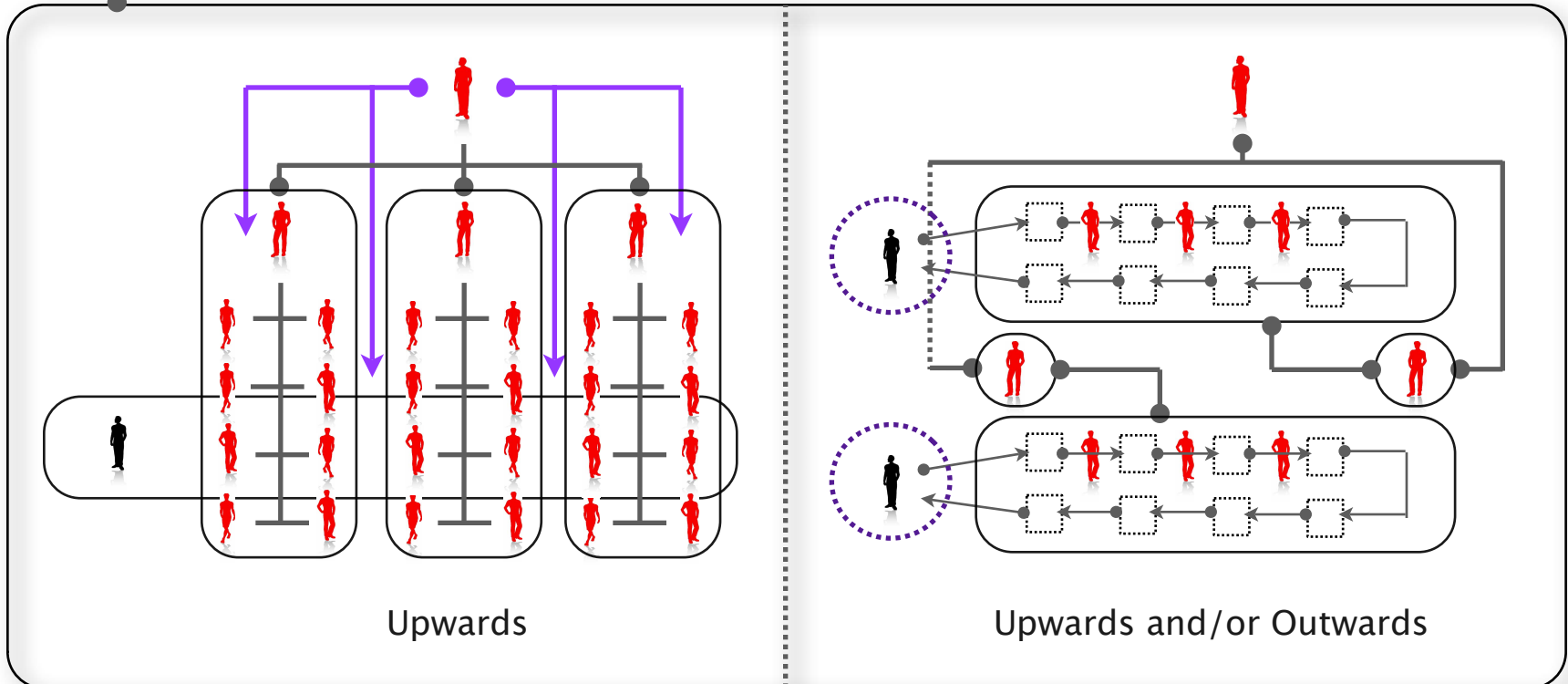


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New System,  
New  
Problems

Career Development



Upwards

Upwards and/or Outwards

The Change  
Process

“People don’t resist change, they resist being changed.”

Peter Senge

The system breaks in a repeated order...

- (1) The People Break.
- (2) The Tools Break.
- (3) The Governance Process Breaks.
- (4) The Customer Breaks.
- (5) The Financial Controls Break.
- (6) The Organisational Structure Breaks...

## Summary

“The important thing is this: To be able at any moment to sacrifice what we are for what we could become.”

Charles Dubois

- The Problem

- The IT System (PARC)

- The Modern IT Division

- The IT Division Refactored

- New System, New Problems

“There is no one right way”

W. Edwards Deming

“We are going to win and the industrial west is going to lose: there’s nothing much you can do about it, because the reasons for your failure are within yourselves. Your firms are built on the Taylor model; even worse, so are your heads.... ”

Konosuke Matsushita

“The fault, dear Brutus, is not in our stars, but  
in ourselves.”

Shakespeare – Julius Caesar



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