Cloud adoption patterns and antipatterns

OLLION™

Speaker profile

Over 12 years in engineering and consulting

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"How hard could it be to move to the cloud?"

Challenges faced

MIGRATING A LARGE NUMBER OF LEGACY APPLICATIONS HAS UNIQUE CHALLENGES THAT NEED TO BE ADDRESSED EARLY

- Leaders are under pressure to deliver digital initiatives at breakneck speed
- The cloud provides a myriad of highly elastic and scalable services, but migrating existing workloads <u>require careful planning and execution</u>
- Migrations also need to be <u>fast, secure and minimally disruptive</u>

Challenges faced

Skill Gaps

Lack of skilled personnel to manage cloud environment.

Cultural and organizational change

Aligning organizational culture with cloud adoption goals.
Managing resistance to change.

Governance and control

Establishing proper governance policies and frameworks.

Security and Compliance

Ensuring security in the cloud. Meeting regulatory and
compliance requirements.

75% of Cloud Migration initiatives overrun the allocated budget

McKinsey (Global management consulting firm)

38% of Cloud Migration efforts are delayed by more than a quarter

McKinsey (Global management consulting firm)

Cost overruns at a global level add up to well more than **$100 billion** in wasted spend over the course of migration in three years.
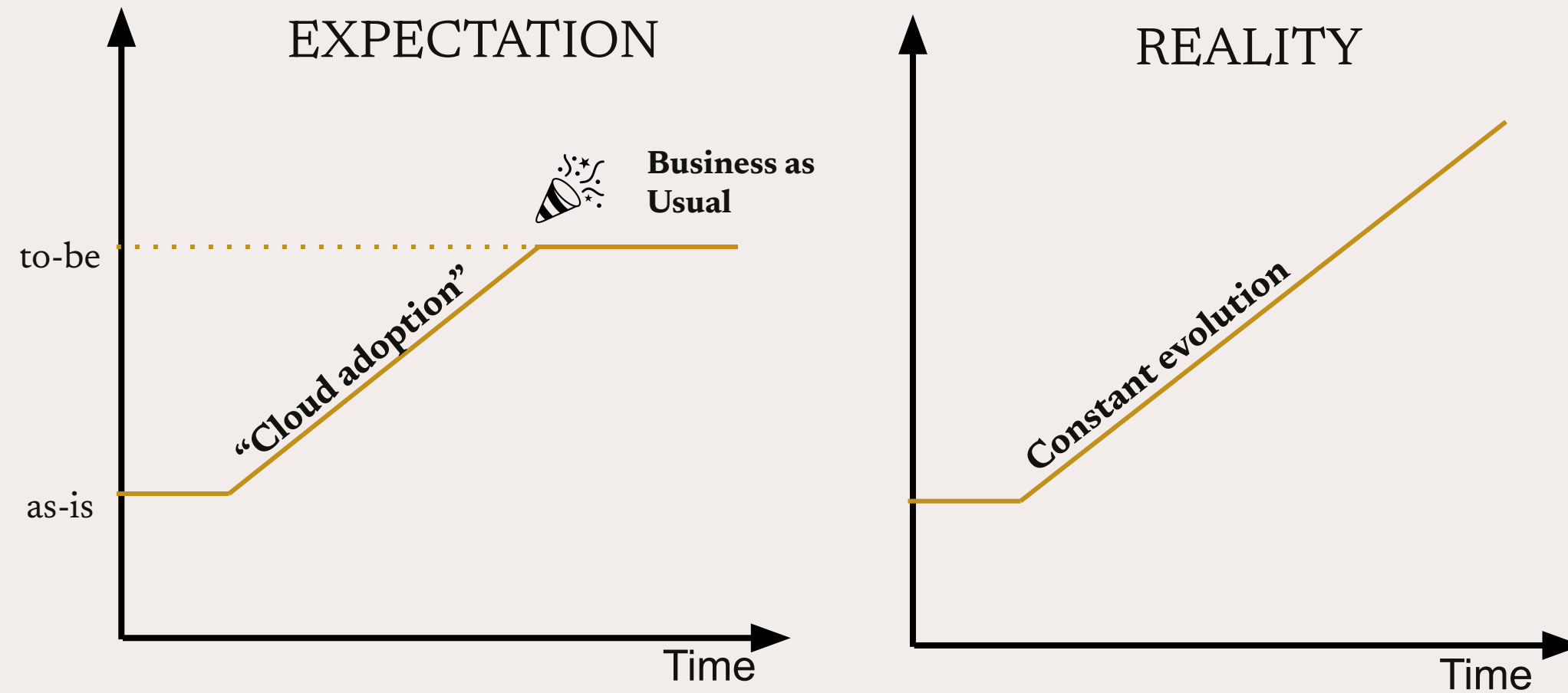
McKinsey (Global management consulting firm)
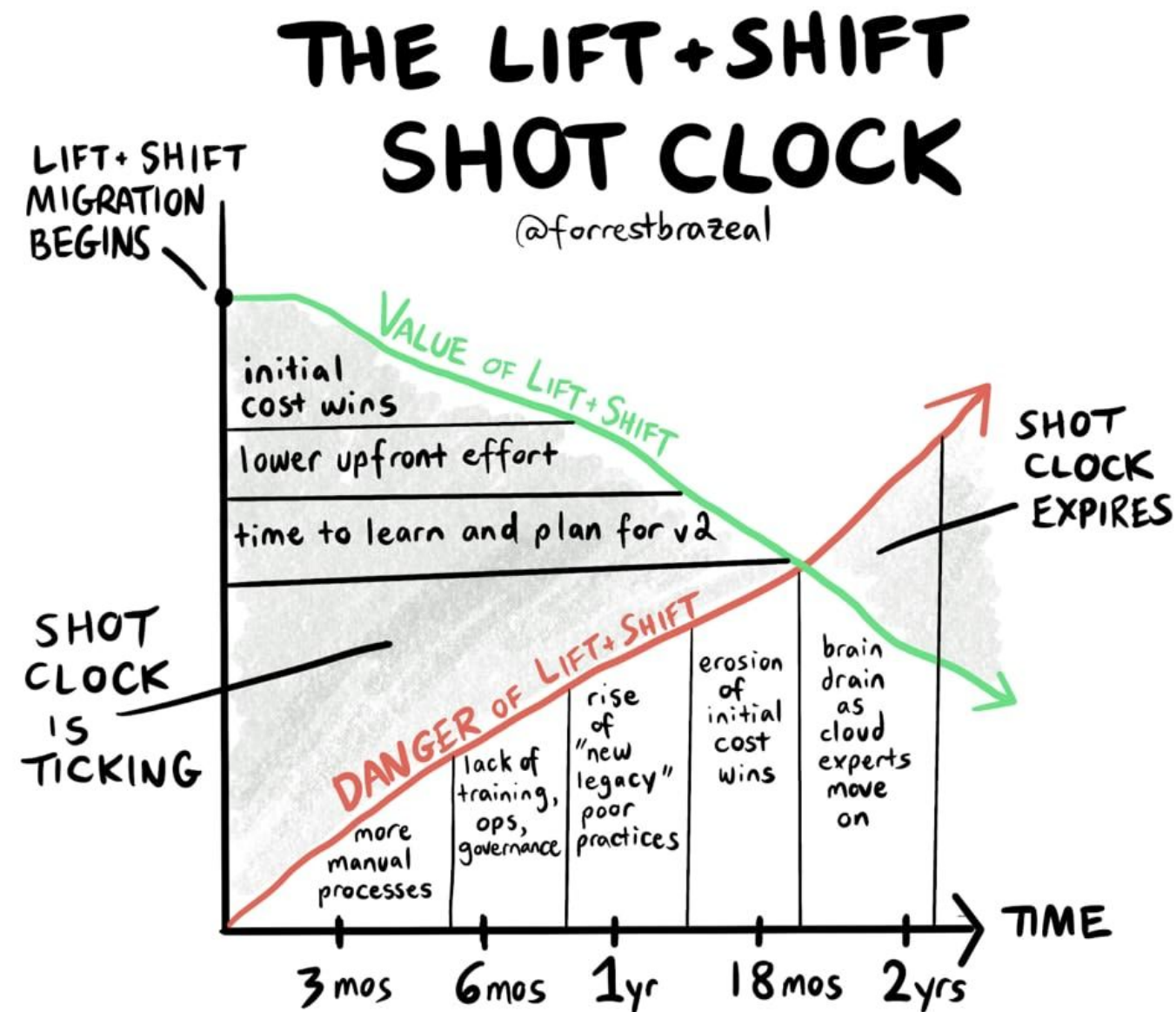
Antipatterns and Patterns

The "cloud adoption project"

EXPECTATION

REALITY

to-be

Business as Usual

"Cloud adoption"

Constant evolution

as-is

Time

Time

Adapted from Gregor Hohpe's "Cloud Strategy"

- In the digital age, assumptions your decisions are based on are evolving faster than you are able to plan for them.

- There is no well-defined target in the digital age. **Organizations should approach cloud adoption as a constant evolution.**

Settling on initial wins

Not moving beyond the first step

THE LIFT+SHIFT
SHOT CLOCK
@forrestbrazeal

LIFT+SHIFT MIGRATION BEGINS

VALUE OF LIFT+SHIFT

initial cost wins
lower upfront effort
time to learn and plan for v2

SHOT CLOCK IS TICKING

DANGER OF LIFT+SHIFT

more manual processes

lack of training, ops, governance

rise of "new legacy" poor practices

erosion of initial cost wins

brain drain as cloud experts move on

SHOT CLOCK EXPIRES

TIME

3 mos   6 mos   1 yr   18 mos   2 yrs

Credits: @forrestbrazeal

- Organizations with an immediate need to move to the cloud may choose to do so via lift and shift as a first step, which starts the shot clock.

- The lift-and-shift shot clock eventually expires when the failure to learn and evolve after migration results in a complete erosion of the initial cost wins

- Lack of further optimization leads to **operational inefficiencies** and **higher costs**.
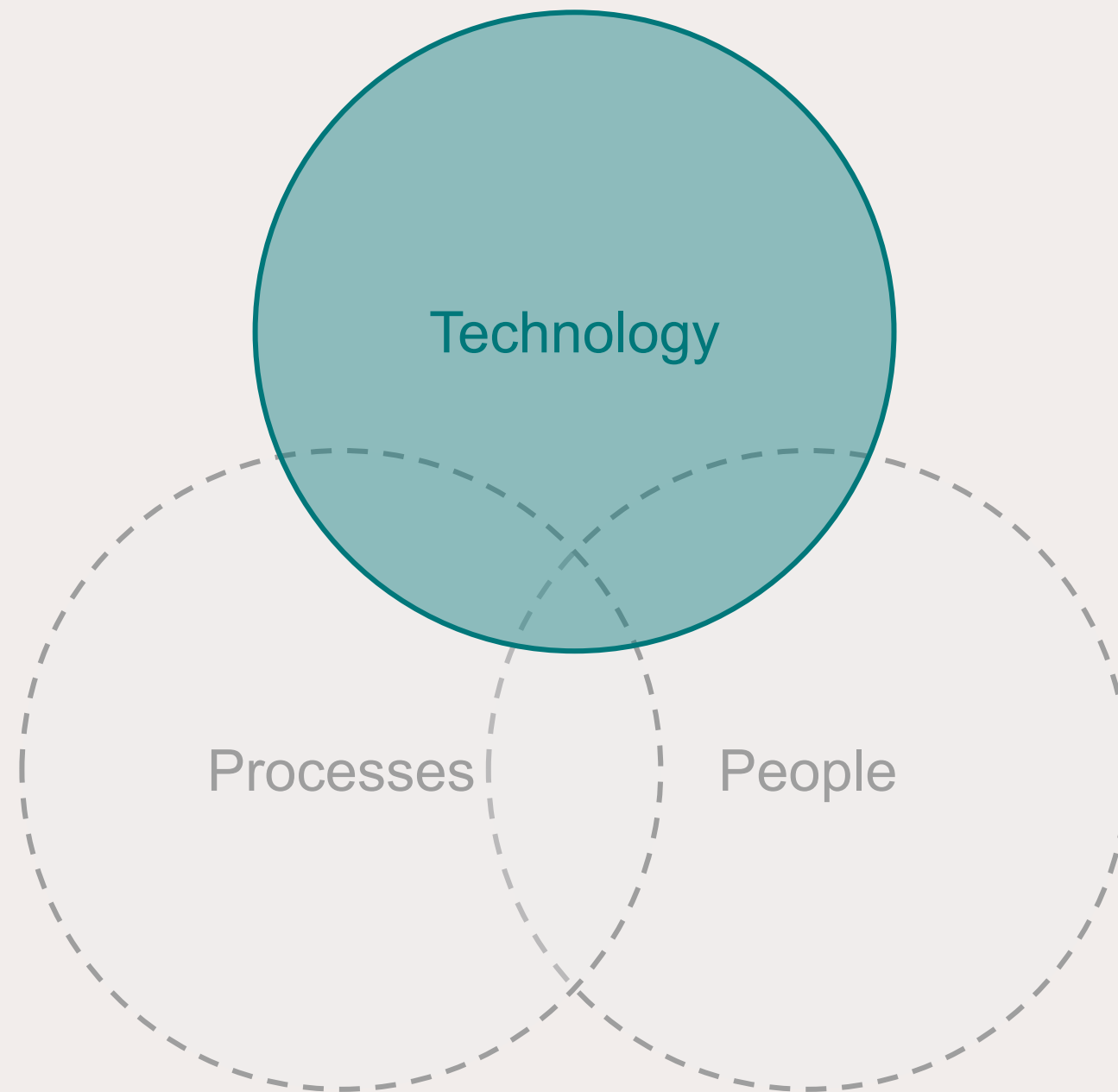
Big Bang approach

Adapted from the Kübler-Ross change curve
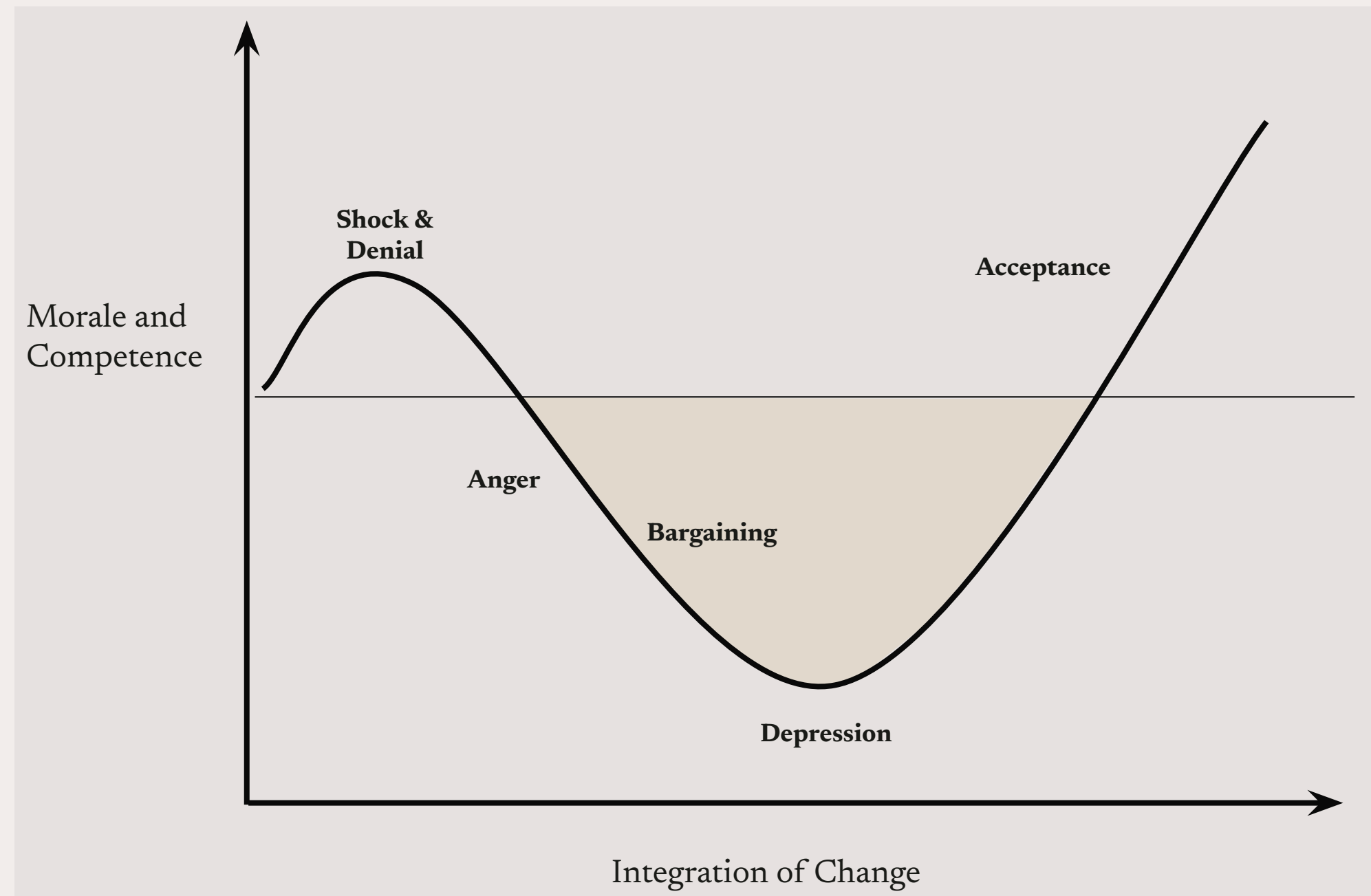
- Resistance from employees from the sudden, large-scale change

- The bigger the change, the deeper the and longer the dip

- Missed opportunity for learning and adjustments

- High chance of cost overruns

Technology tunnel vision

Technology

Processes | People

- It is easy to have "tunnel vision" and focus only on the technology aspects.

- Cloud adoption is a **socio-technical** endeavor. Shaping the socio-technical architecture of your organization is key to unlocking fast flow in your organization

- Organizations that fail to do so find themselves stuck with legacy processes and teams that are unable to operate efficiently in the cloud

Where are you in your cloud adoption journey?

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Which antipattern(s) have you seen in your organization?

Join at
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Patterns

Cloud as a Lifestyle

No longer an option but a business imperative

Cloud enablement focuses on

- Eliminating bottlenecks that come with upfront capacity planning.
- Exploiting the highly elastic nature of the cloud and scale on demand
- Improving reliability through highly available services
- Enabling ease of expansion into new markets

"Organizations are actively investing in cloud technology due to its potential to <u>foster innovation</u>, <u>create market disruptions</u>, and <u>enhance customer retention</u> in order to gain a competitive edge"

– GARTNER

$478.3B
Estimated spend on public cloud in 2022

>

$678.8B
Estimated spend on public cloud in 2024

Embrace the cloud as a lifestyle

Cloud First

Designing applications to take advantage of the scalability and elasticity of the cloud

Cultural Shift

Encourage experimentation, rapid feedback loops for fast flow and learning

Business Agility

Using modern cloud tools to enable quicker development of applications and services, leading to faster innovation cycles

Cloud Economics

Taking advantage of the cloud's pay-as-you-use pricing model and better cost insights, providing you with more levers for cost optimization.

Approach cloud adoption holistically

Business & Technology Alignment

CLEAR & CONCISE

Objectives should be written simply and clearly with no ambiguity, aligned to the organization's vision.

ACTIONABLE & MEASUREABLE

There is a clear path of action to build capabilities which enable the organization to achieve its objectives.

COHERENT

Objectives, capabilities and actions need to be aligned across the organization and drive all effort towards common goals.
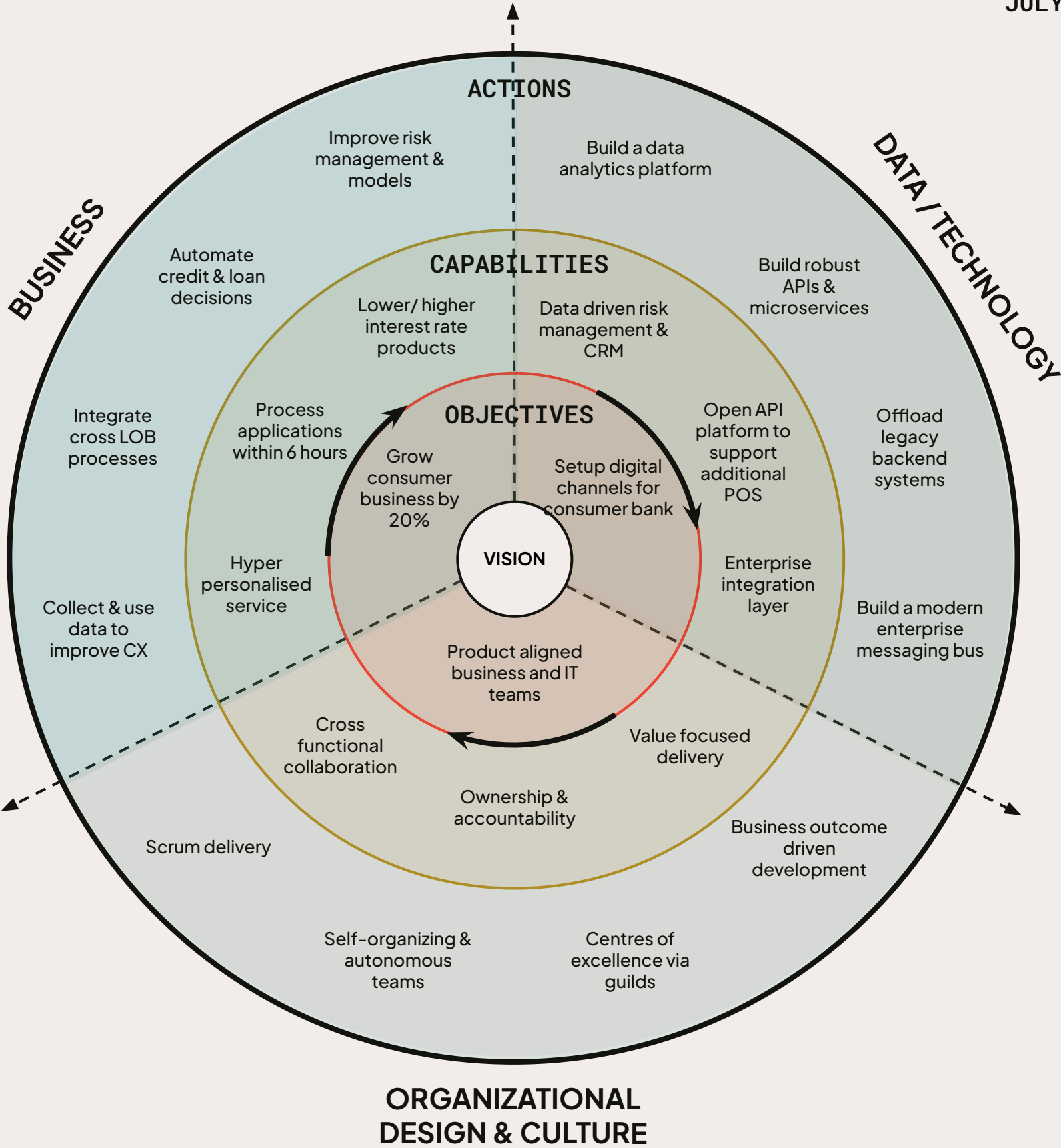
DEFINITION OF OBJECTIVES AND MAPPINGS TO VISION

EXECUTION & GOVERNANCE FRAMEWORKS MAP ACTIONS AGAINST KPIS

ARCHITECTURAL AND SOLUTIONING METHODS DRIVE KPIS TO ACHIEVE CAPABILITIES

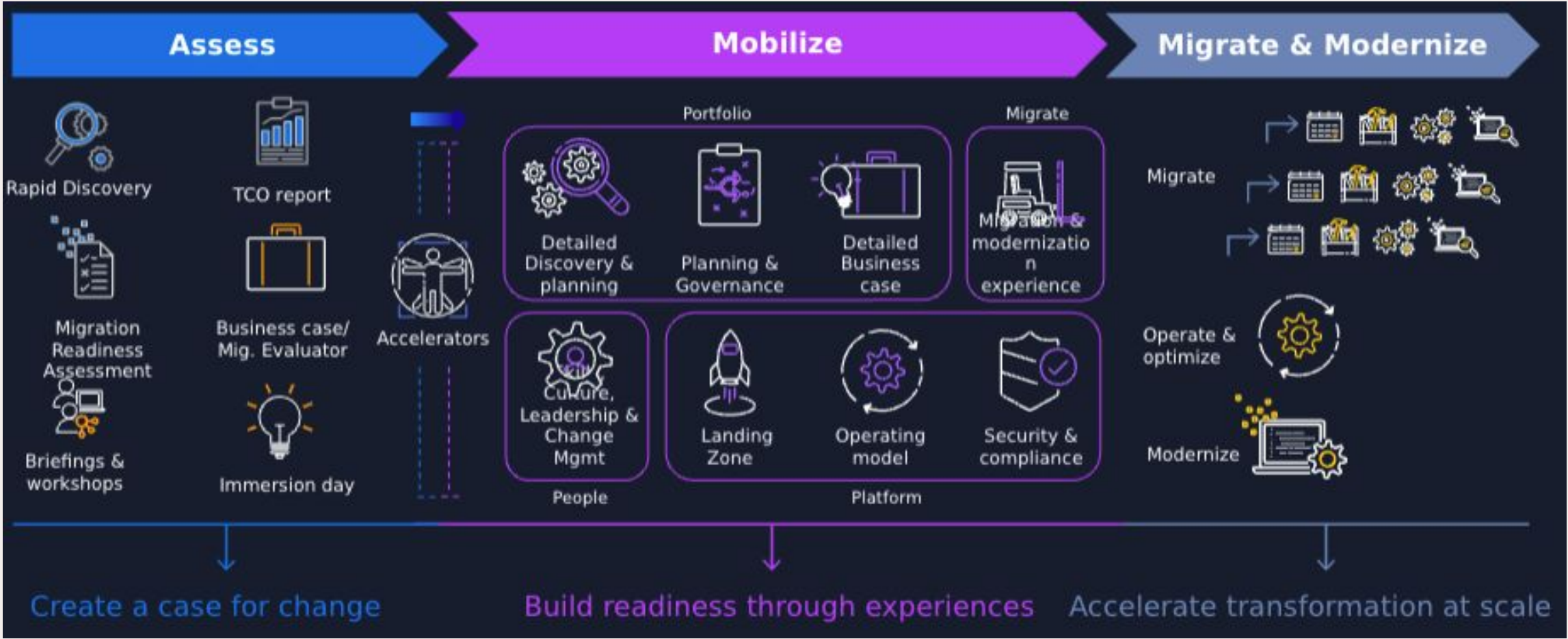VISION DRIVES OBJECTIVES THROUGH TO CAPABILITIES AND ACTIONS

OBJECTIVES, CAPABILITIES AND ACTIONS HAVE DEPENDENCIES ACROSS THE ORGANISATION AND NEED TO BE COHERENT

Migration Framework

aws

+

OLLION™

AWS Well-Architected Framework

Performance Efficiency

Using resources efficiently to meet system requirements. This includes selecting the right resource types and sizes and monitoring performance to make improvements.

Security

Ensures the protection of data, systems, and assets. Key practices include strong **identity management, data protection**, and responding to **security incidents.**

Reliability

Ensures a workload performs **correctly and consistently**, even when there are failures. It involves designing systems that can recover from issues and handle varying demand.

Operational Excellence

Focuses on running and monitoring systems effectively to improve processes and procedures. This includes automating changes and responding to events.

Cost Optimization

Avoids unnecessary costs by using a pay-as-you-go model, analyzing spending, and scaling resources based on need.

Sustainability

Focuses on minimizing environmental impacts. This involves designing systems that are energy-efficient and adopting practices that reduce resource consumption and waste.

Multi-phased Cloud Migration

Migration wave planning

Candidates for migration are prioritized according to their impact on the business and the level of effort needed for migration. A comprehensive migration involves multiple phases, with the pace accelerating as the process advances and more expertise is acquired.

BUSINESS VALUE

PHASE 1

Low migration efforts with high business value.

PHASE 2

High migration efforts with high business value.

PHASE 3

Low migration efforts with low business value.

PHASE 4

High migration efforts with low business value.

EFFORT
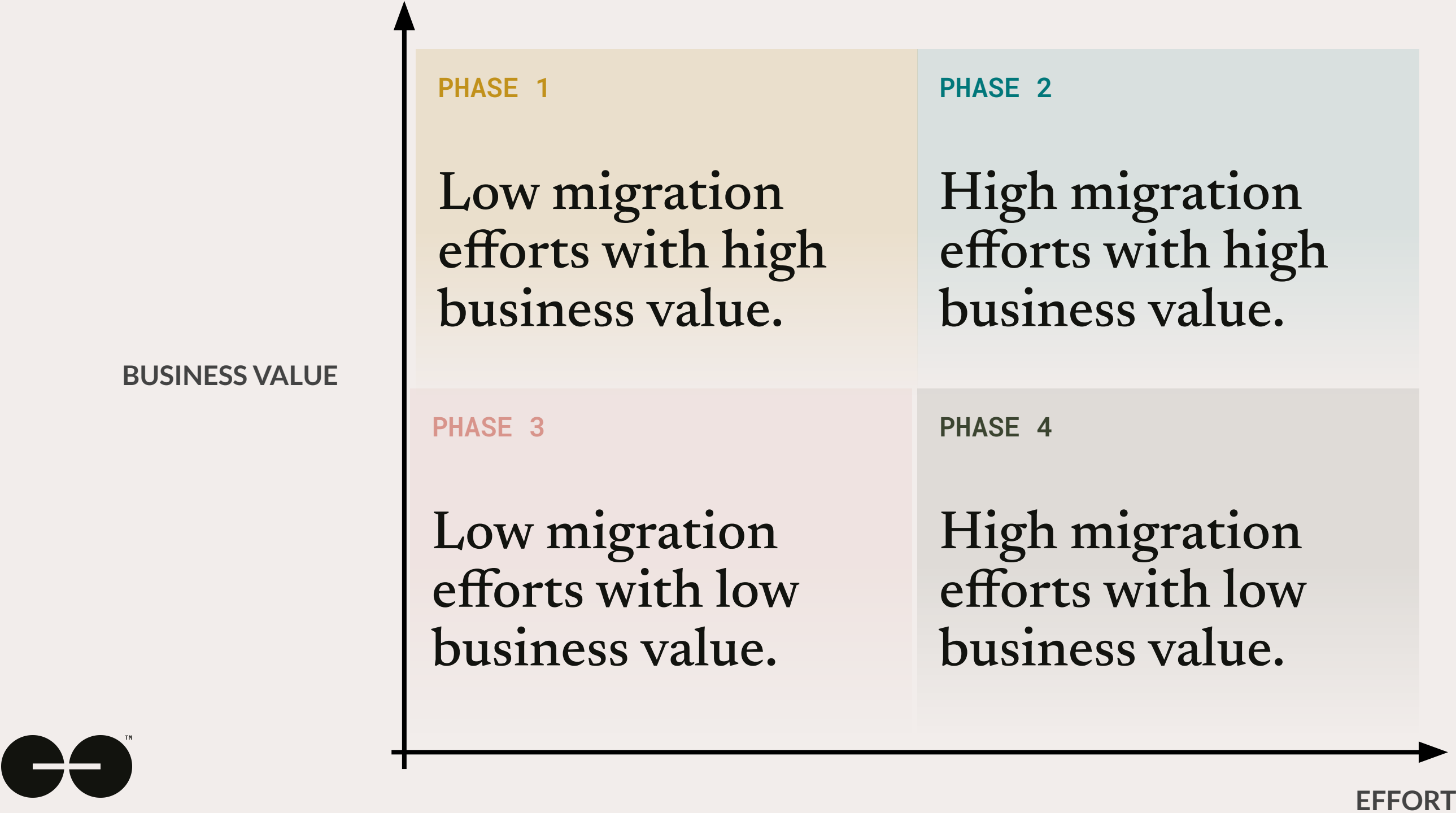
Service migration readiness

Migration candidates are categorized into Green line, Red line, and Black line during each phase. This classification is determined by both their preparedness for migration and their significance in the target infrastructure post-migration.

Green line

Clear of any identified issues and prepared for migration to the target infrastructure.

Red line

Identified issues necessitate correction before proceeding with migration. A remediation sprint is essential to address these issues before advancing to the Green Line.

Black Line

Ineligible for migration due to factors such as deprecation, out-of-scope considerations, compliance issues, etc.

High level migration approach

DISCOVERY

PLAN

- Triage Migration Readiness
- Target migration approach
- Migration waves

WAVE 1

WAVE 2

WAVE N

MIGRATION WAVE (S)

Based on impact on the business and the level of effort needed for migration

GREEN LINE

Ready to be migrated

REMEDIATION SPRINT(S)

RED LINE

Issues identified which need to be corrected before migrating

BLACK LINE

Cannot be migrated

MIGRATION FACTORY

APP MODERNIZATION

REHOST

REPLATFORM

REPURCHASE

REFACTOR

- Automated Processes
- Migration tools
- Validation
- Transition

- Determine New Platform
- Integration, Validation
- Modify Underlying Infrastructure

- Evaluate COTS/SaaS suitability
- Deploy and Integrate
- Validation
- Transition

- Redesign Architecture
- Integration
- Validation
- Transition

- Retain/Retire

Fit for purpose Operating Model

Operating Model

A cloud operating model defines how you want to operate as an organization to effectively use cloud services to deliver value.

Organizational context, nuances, and cultures are crucial when we design fit-for-purpose operational models.
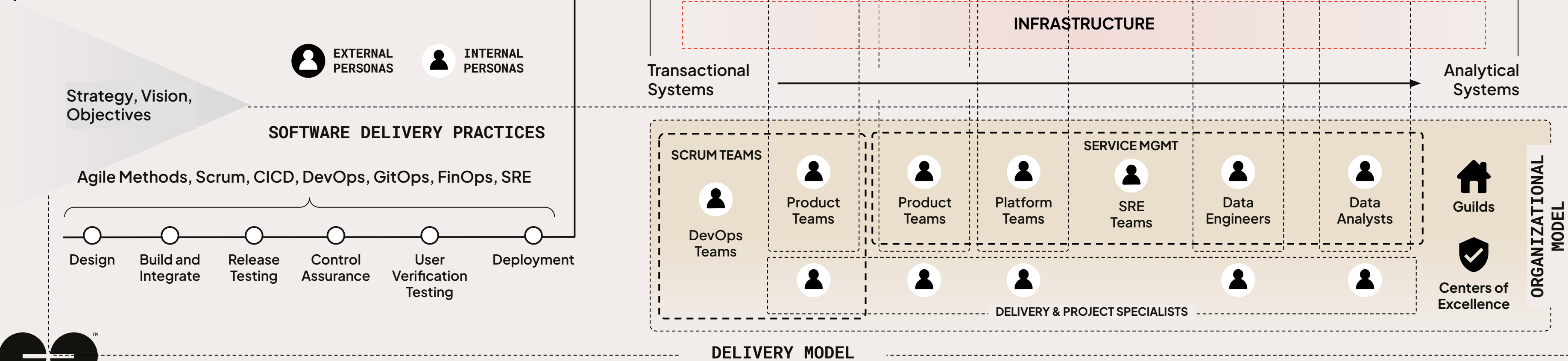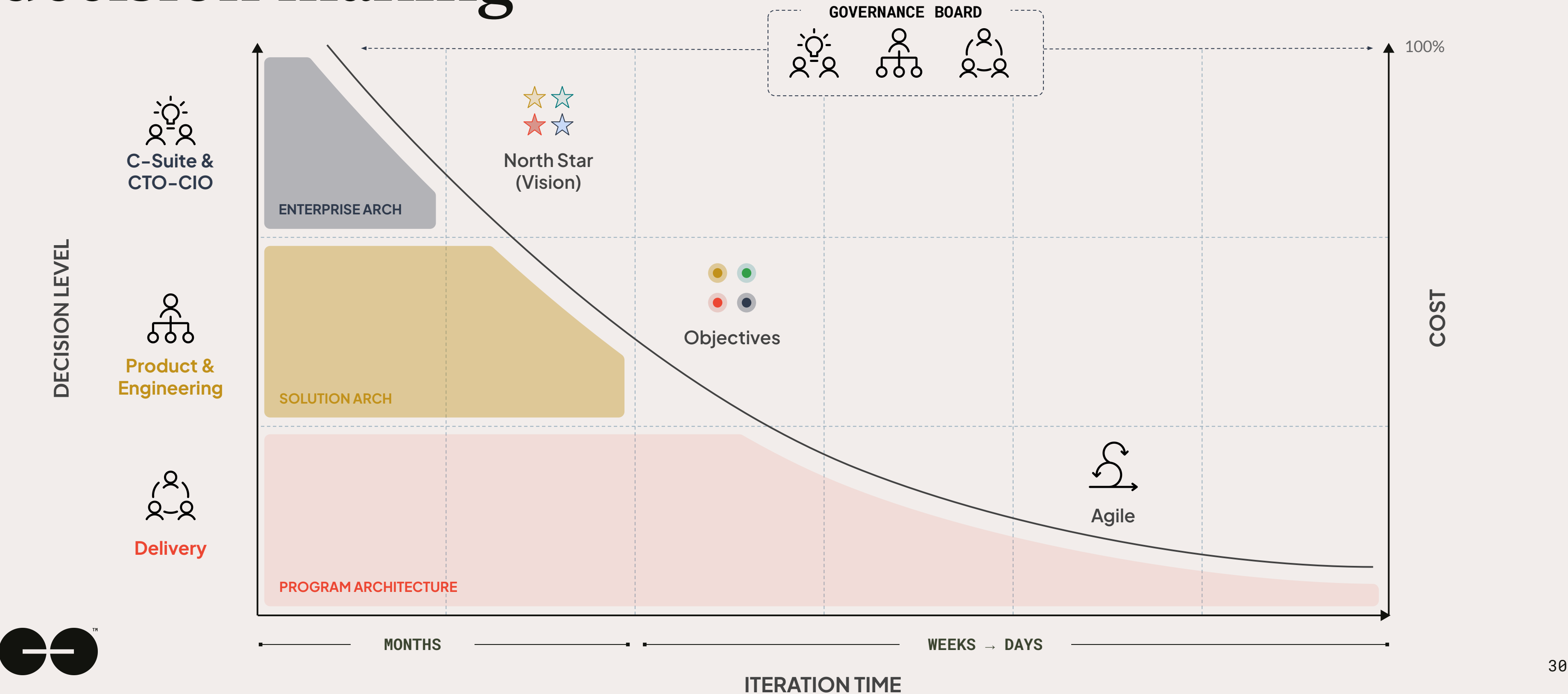

BUSINESS DOMAINS

Retail Clients Corporate Clients Business Partners Regulators Data Consumers Business Users

LINES OF BUSINESSES

TECHNOLOGY ARCHITECTURE

DATA

APPLICATIONS

INTEGRATIONS

INFRASTRUCTURE

Transactional Systems → Analytical Systems

EXTERNAL PERSONAS   INTERNAL PERSONAS

Strategy, Vision, Objectives

SOFTWARE DELIVERY PRACTICES

Agile Methods, Scrum, CICD, DevOps, GitOps, FinOps, SRE

Design — Build and Integrate — Release Testing — Control Assurance — User Verification Testing — Deployment

SCRUM TEAMS   **SERVICE MGMT**

DevOps Teams   Product Teams   Product Teams   Platform Teams   SRE Teams   Data Engineers   Data Analysts

Guilds

Centers of Excellence

ORGANIZATIONAL MODEL

DELIVERY & PROJECT SPECIALISTS

DELIVERY MODEL

29

Define the North Star to enable distributed decision making

GOVERNANCE BOARD

DECISION LEVEL

C–Suite & CTO–CIO

Product & Engineering

Delivery

ENTERPRISE ARCH

SOLUTION ARCH

PROGRAM ARCHITECTURE

North Star (Vision)

Objectives

Agile

COST

100%

MONTHS

WEEKS → DAYS

ITERATION TIME

30

Recap

Recap

DON'T	DO
Cloud Adoption as a project	Cloud as a Lifestyle
Settle on initial wins	Approach cloud adoption holistically
Big Bang approach	Multi-phased migration
Technology tunnel vision	Fit for purpose operating model