

Modeling the Digital Enterprise

An Approach to Organizational Modeling Through the Application of Enterprise Architecture and MBSE

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What is Business Transformation?



Process

Reinvent business processes by enabling ubiquitous access to data, analytics, application programming interface (API), machine learning , robotic processes automation (RPA) and other techniques to in order to reduce costs, cycle times, or increasing quality.



Model

Transformation of current business models to provide more value to customers using emerging technologies or through an integration of innovative or existing technologies.



Domain

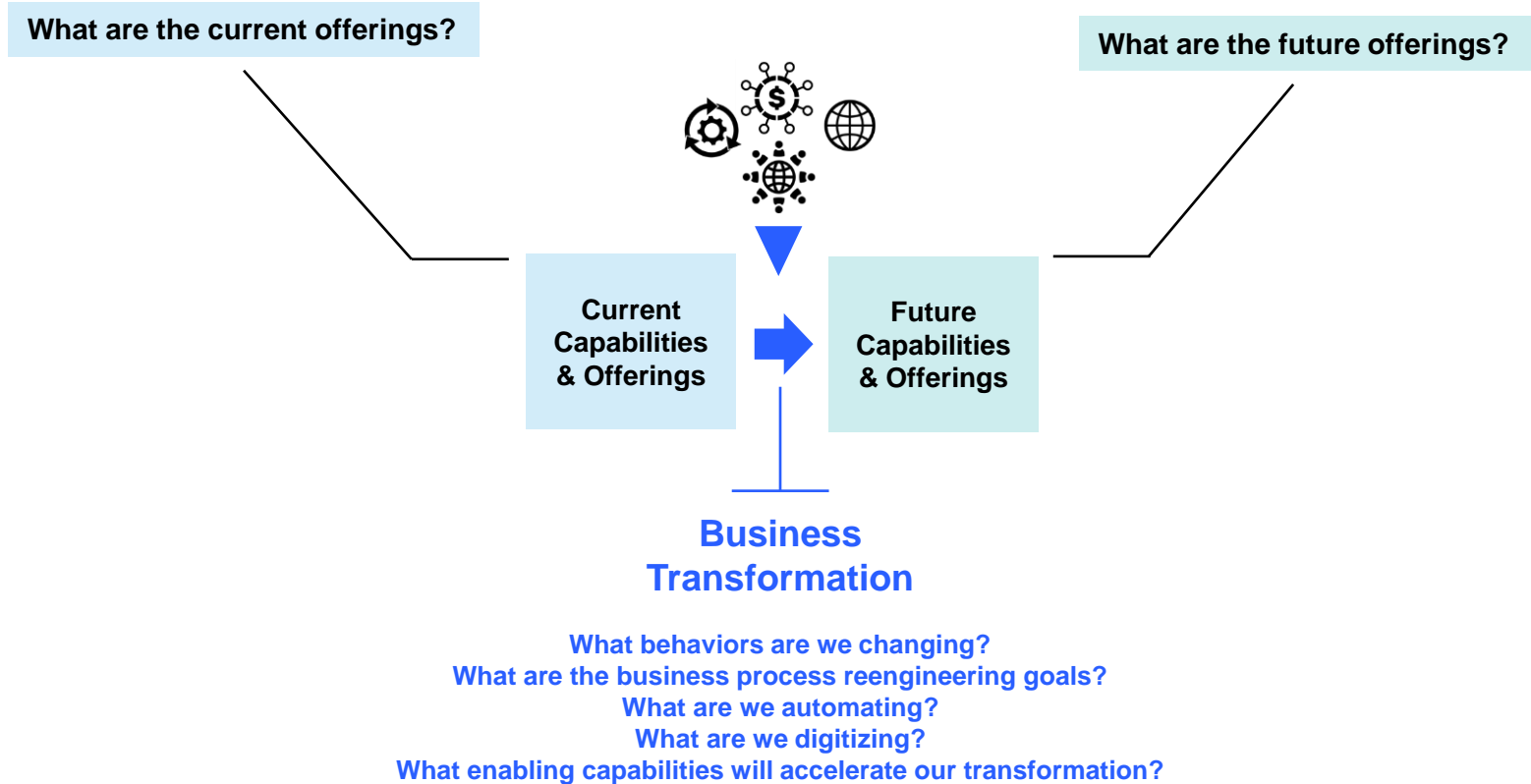
The potential to unlock the expansion into new industries to create new businesses domains within the company. Technologies can redefine what services, products or value a company can provide.



Culture

A complete redefinition of the mindset of the company leadership and employees. Requires a shift to a more agile workforce with the right skillsets, tools and infrastructures necessary to support the transformation.

Business Transformation Strategy



Business Transformation

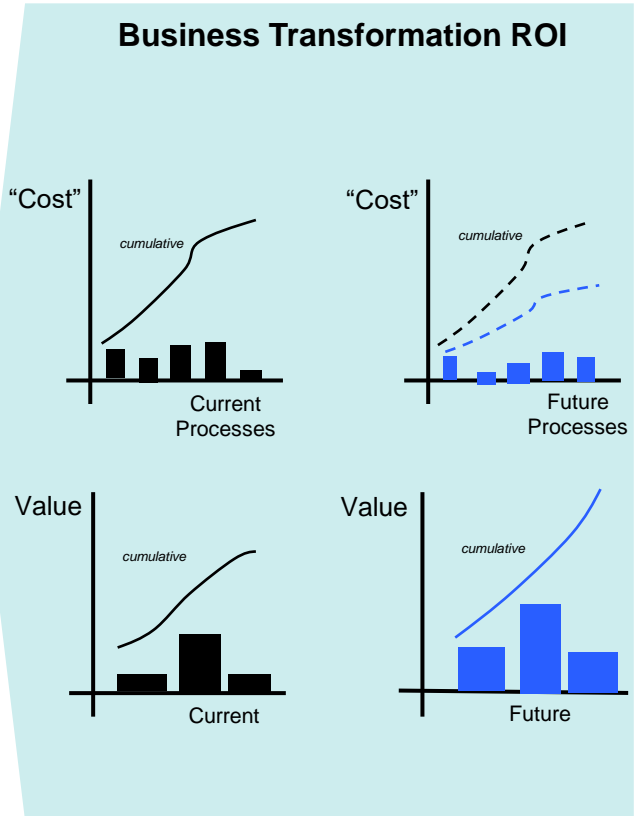
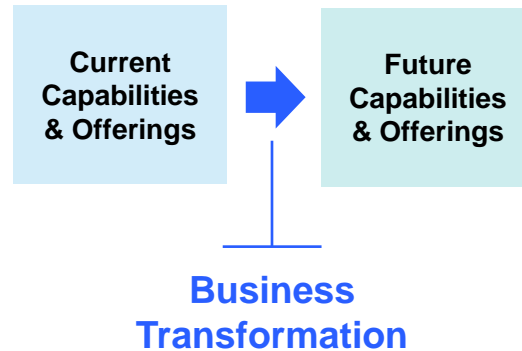
Goals & Metrics

Reduce “Cost”:

- Amount of toil
- Inefficiencies in our delivery
- Manual efforts that could be automated

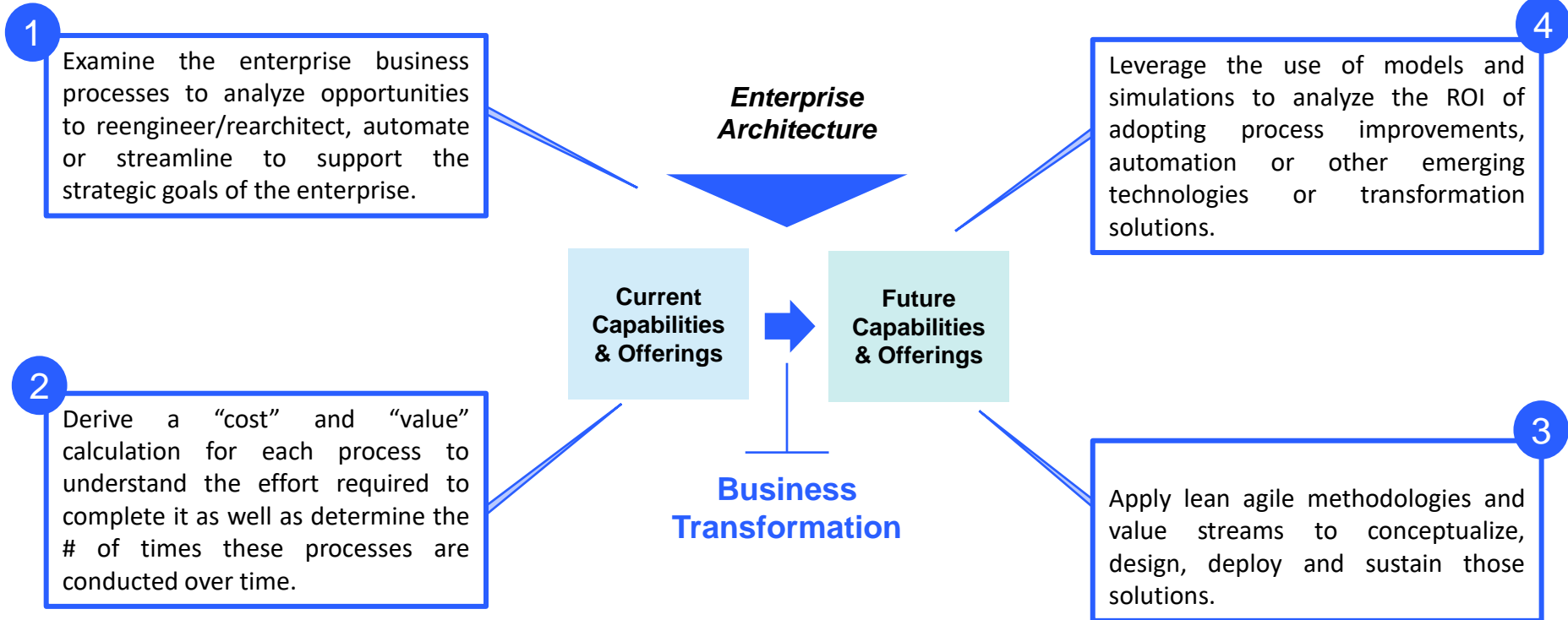
Increase “Value”:

- Profits
- Operational Efficiency
- New Offerings
- Innovation



Business Transformation

Enterprise Architecture Driven



Business Transformation

Descriptive (SysML) Diagram Uses

1

Use activity diagrams to capture our processes, information flows and organizational dynamics as a narrative that can be explained/analyzed to consider opportunities for transformation

2

Develop use-cases of the systems under consideration, tied to requirements

3

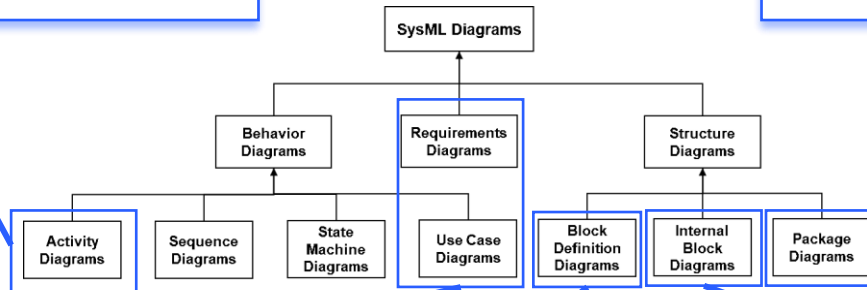
Use BDDs to capture the structure of the business functions, decomposition of functions and structure for the business transformation solution / system architectures.

5

Use package diagrams to organize the various views of the business functions, processes and solutions

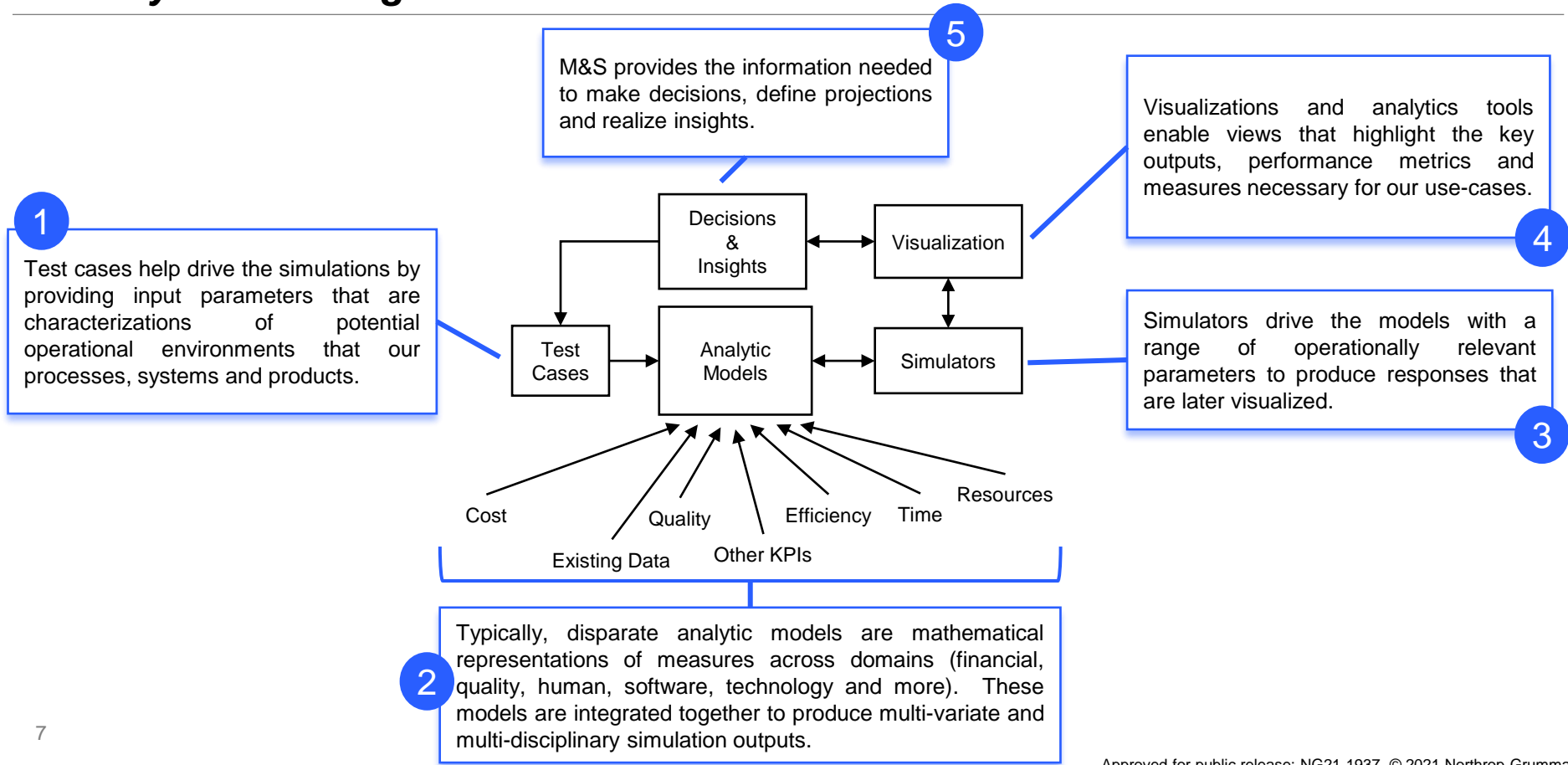
4

IBDs help to capture the interfaces between the various parts of the systems as well as data / information dependencies and types.



Business Transformation

Analytic Modeling & Simulation Uses



Business Transformation

Digitalized by Model Based Systems Engineering Methods

Goals

Current Capabilities & Offerings



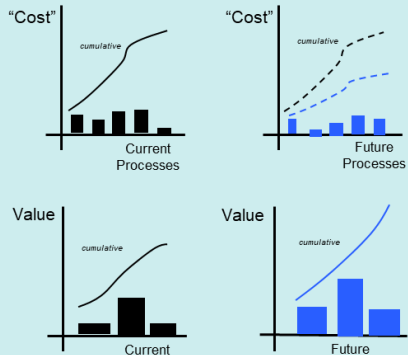
Future Capabilities & Offerings



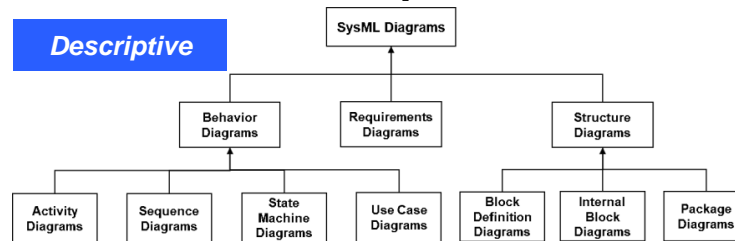
Capture and analyze the current state



Capture, analyze and project the future state



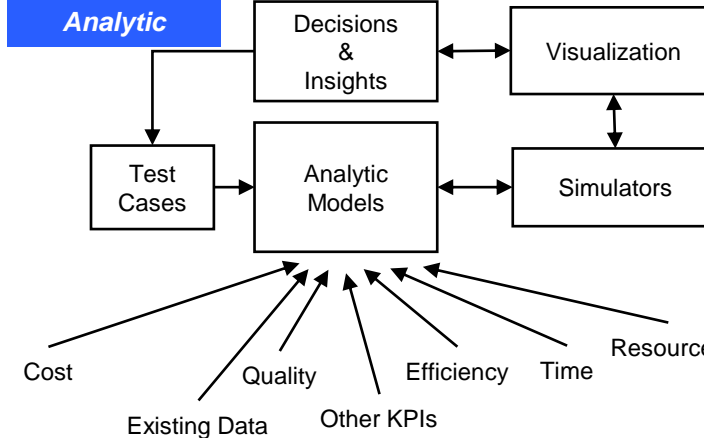
Techniques to Drive Transformation



Use sysML to conceptualize, design, deliver and sustain the transformational solutions *(as-is and to-be architectures)*

System Model Unification

Descriptive and Analytic Model Integration for full system design and analysis



Use models, data, simulations and visualizations to analyze our current and future costs, value and key performance metrics throughout our transformation delivery

Analytic Model Types

Business Transformation

Descriptive & Analytical Modeling Alignment – 1st Cut

1

Descriptive

Behavior

Use Case Diagrams

Activity Diagrams

Requirements

Requirements Diagrams

Sequence Diagrams

Structure

BDD

IBD

BDD

BDD

IBD

Package

2

Analytic

Modeling and Simulation

Business Use-Cases and Requirements

Functional Architecture and Decomposition

Processes (Activities and Information Flow)

Organizational Structure

Business Transformation Proposed Solutions

Analytic Models of the KPIs

Data of the Team (Skills, Experience, # of Persons, Operational Costs, etc)

Models that calculate the performance, effectiveness and cost of the solution

Visualization & Analytics

Multi-variate views of the simulation outputs

Data exploration

Analytics

Business Transformation

Process and Info Flow Example – Integration of Descriptive and Analytics

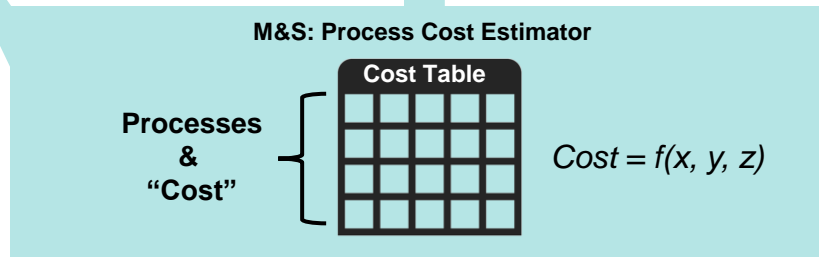
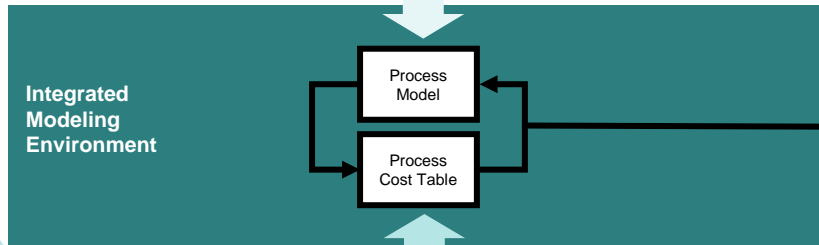
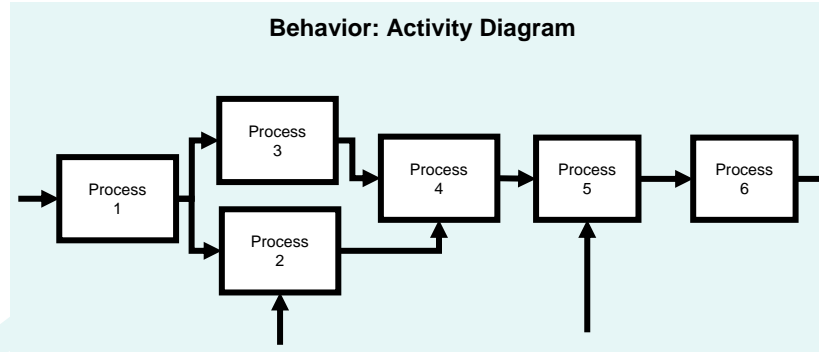
Business Use-Cases and Requirements

Functional Architecture and Decomposition

Processes (Activities and Information Flow)

Organizational Structure

Business Transformation Proposed Solutions



Visualization & Analytics

Interconnected

Insightful

Interactive

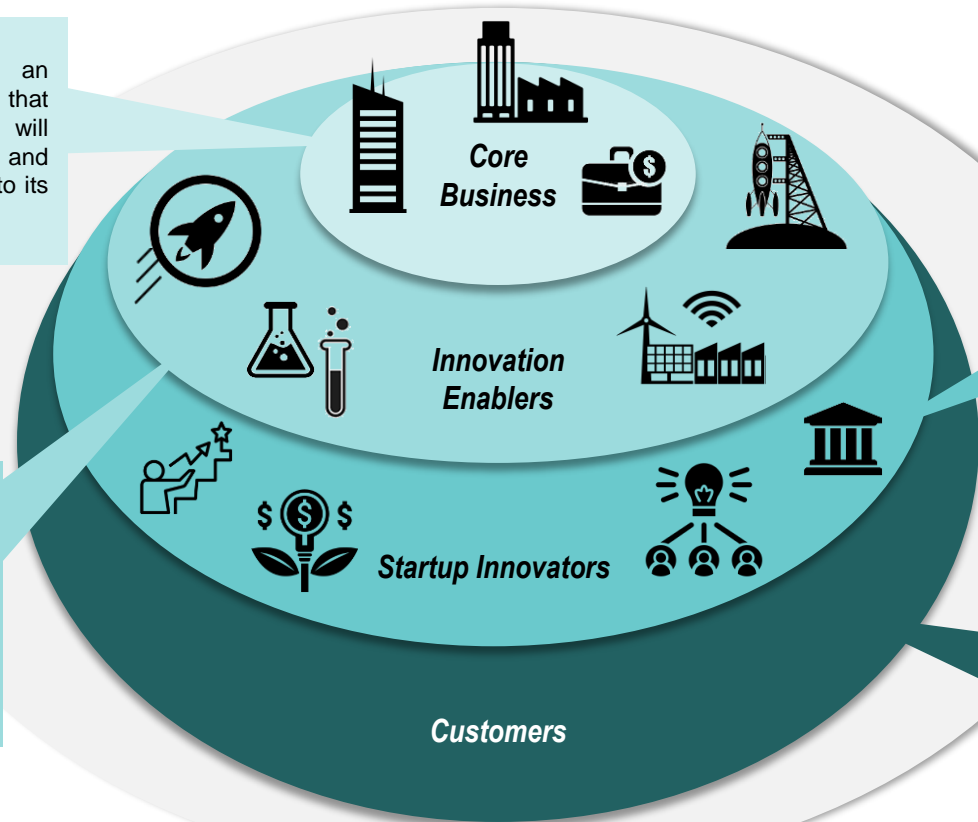
Example Case Study –

The Innovation Factory

Example Organization Case Study: *The Innovation Factory – OV-1*

The Innovation Factory relies on an executive leadership believes that promoting a culture of innovation will enable it to provide value added and transformative products and services to its customers.

Innovation initiatives support tech accelerators, innovation labs and factories, and sky/moon shot projects. These are the methods that drive innovation forward and includes strategic relationships with vendors/partners.



Hackathons, challenges, ideas and university research are developed with seedling funding and helps to cultivate a culture of entrepreneurs and serial innovators.

Customer engagement is key in enabling customer co-creation and bringing customers into the innovation process to test new ideas, concepts and capabilities.

Example Organization Case Study: *The Innovation Factory – OV-1*

Capability Alignment & Assessment

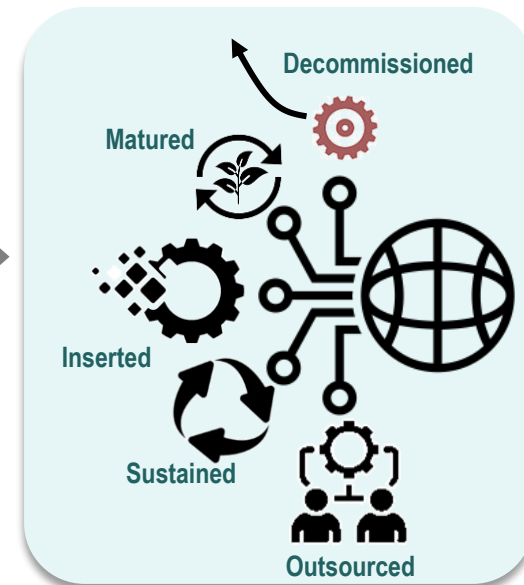
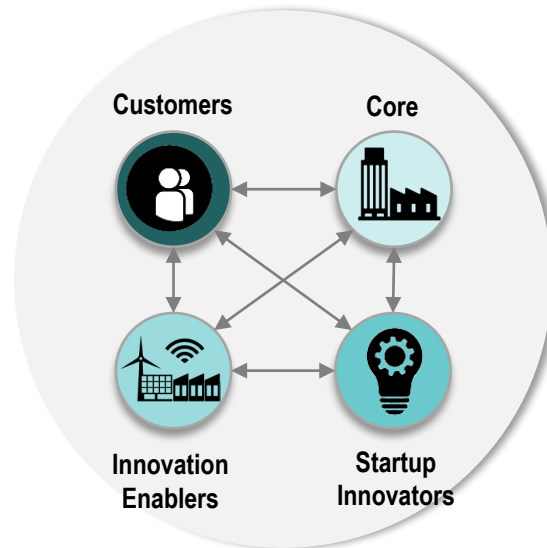
Strategically align business goals, partnerships, roadmaps and capabilities to provide value to customers in an environment uncertainty.

Capability Discovery, Maturity & Insertion

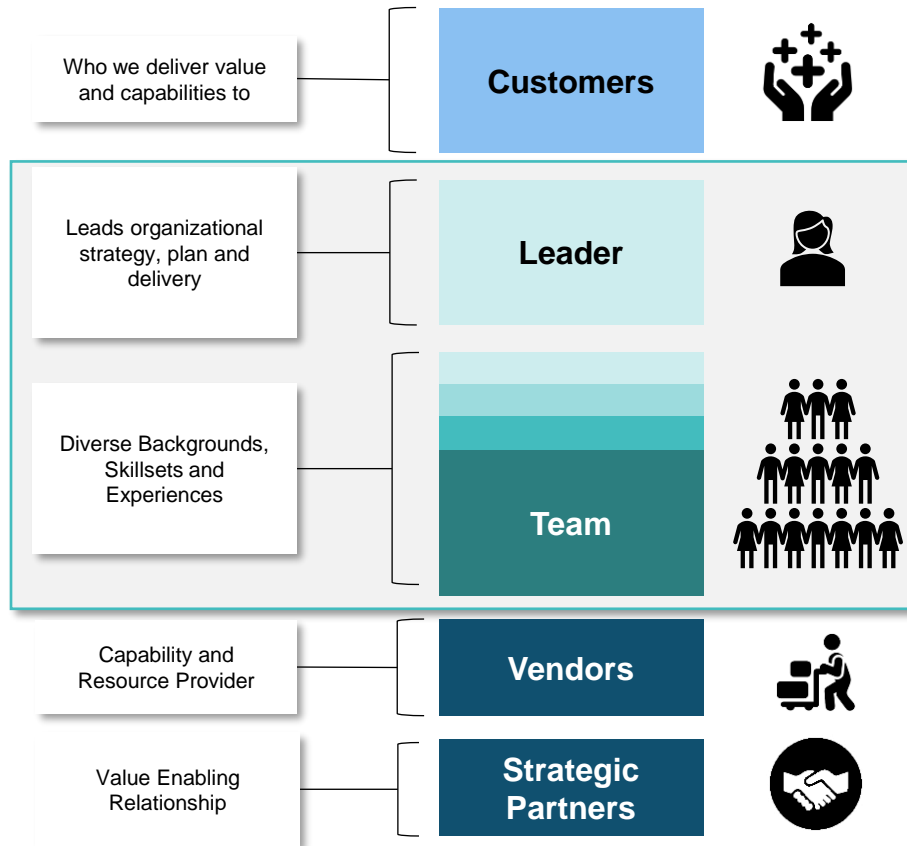
Empowering teams to ideate, innovate and drive discovery, learning and maturation to provide value to our customers.

Disruption at Scale

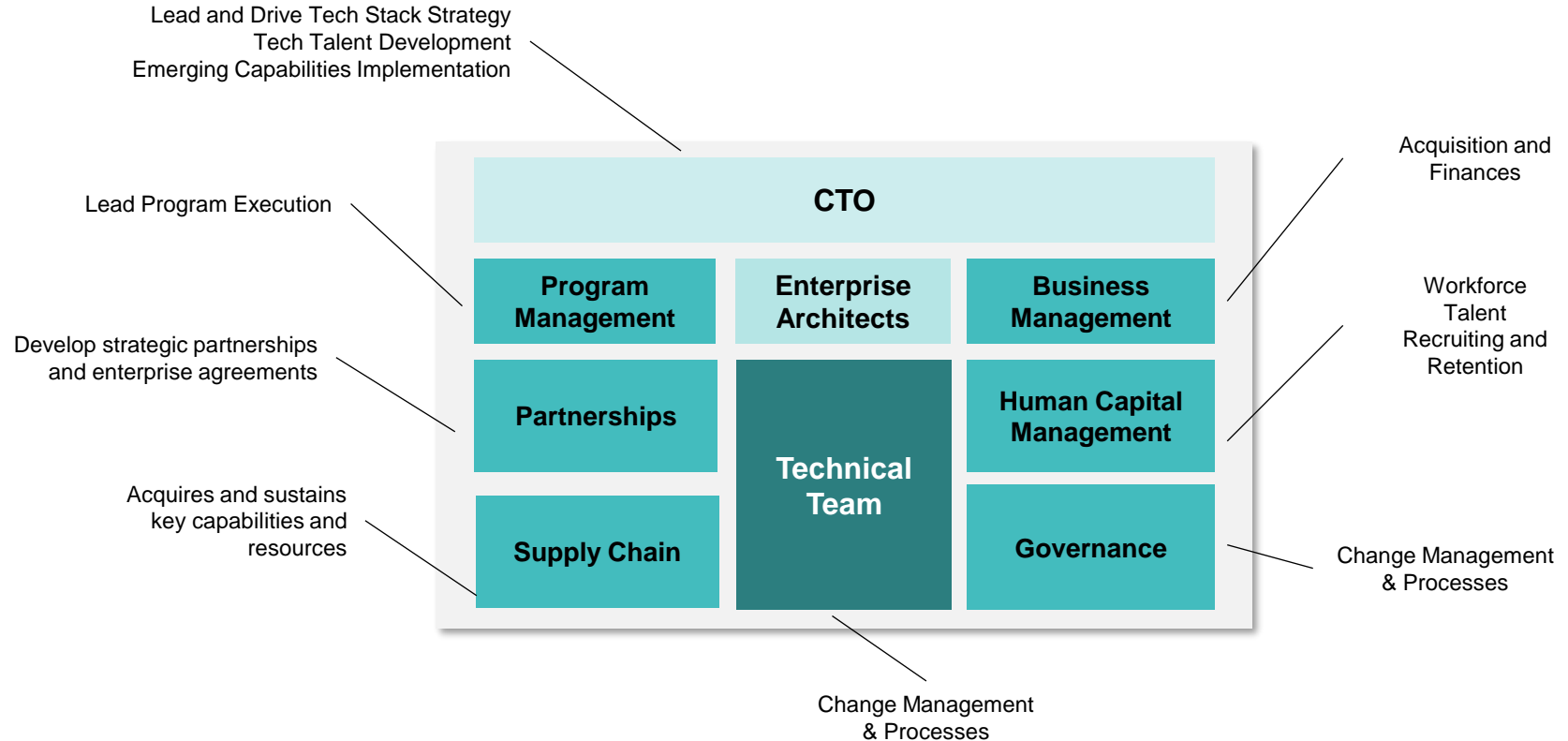
Insertion of emerging, operationalized capabilities at enterprise scale.



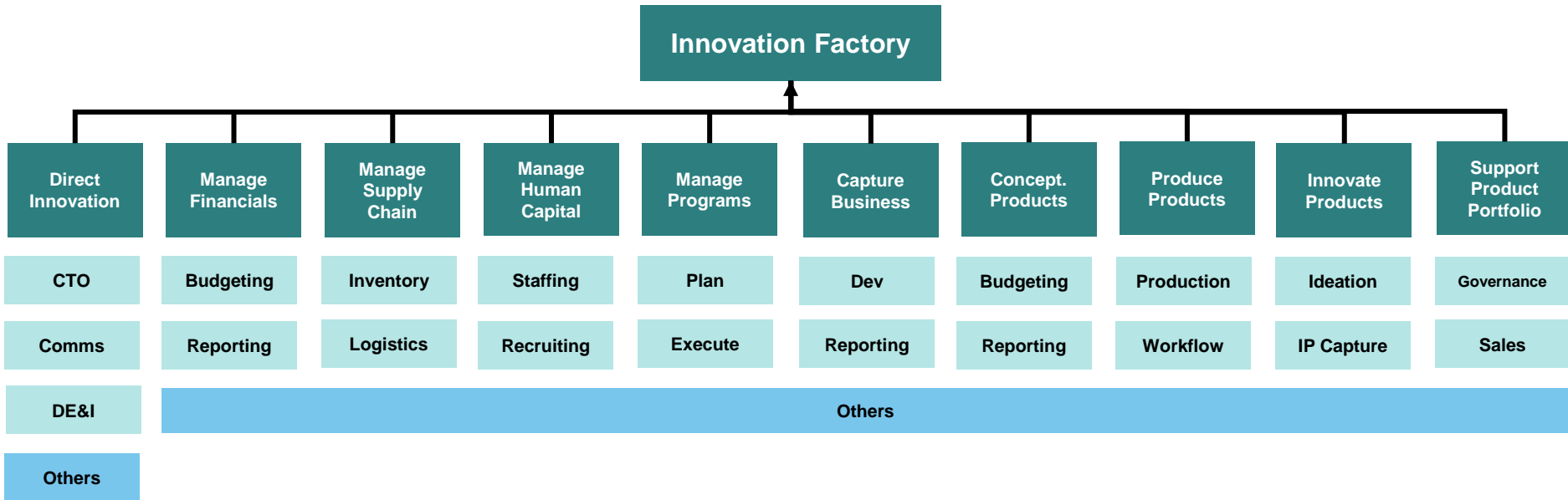
Example Organization Case Study: *The Innovation Factory – Structure*



Example Organization Case Study: *The Innovation Factory – Team Expanded*



Example Organization Case Study: *The Innovation Factory – Functional Architecture*



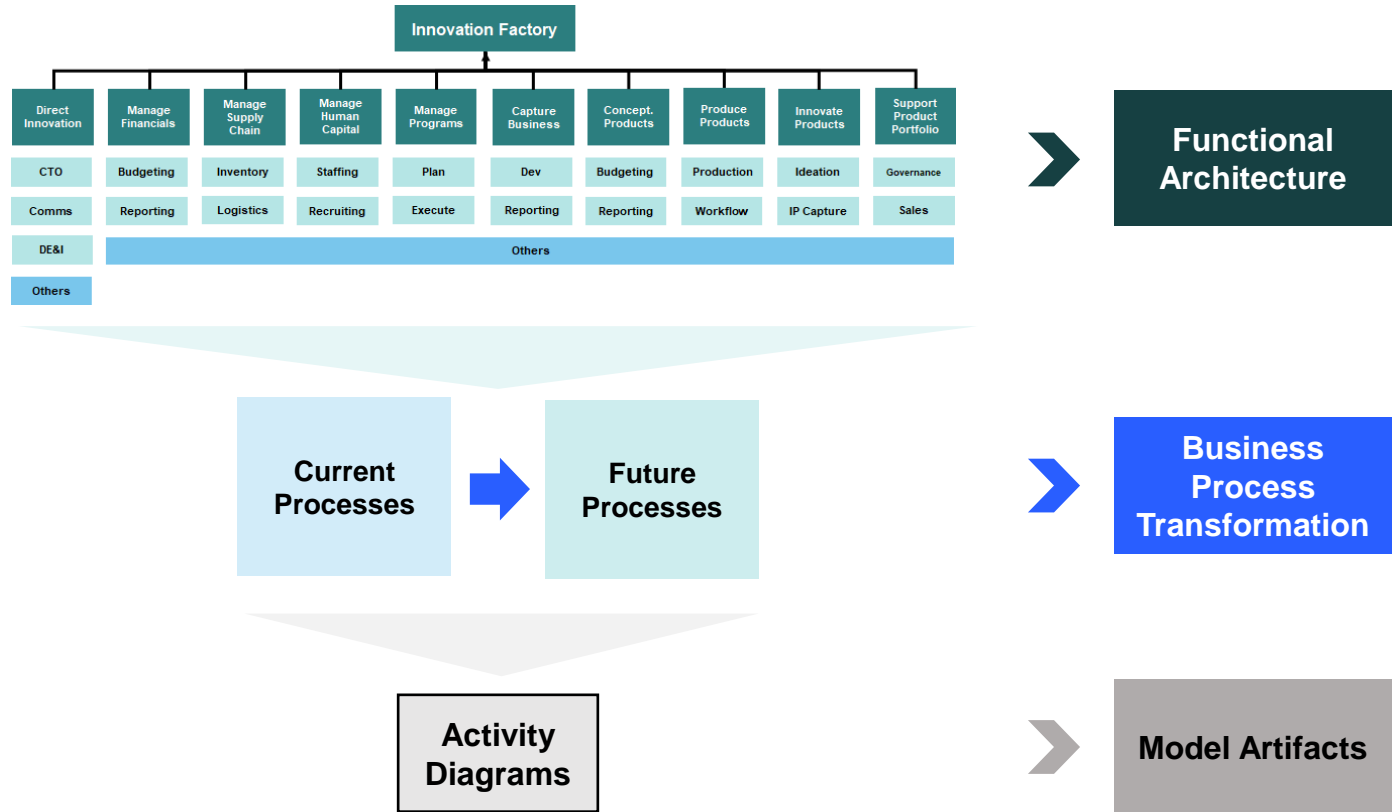
BDD



Model Artifacts

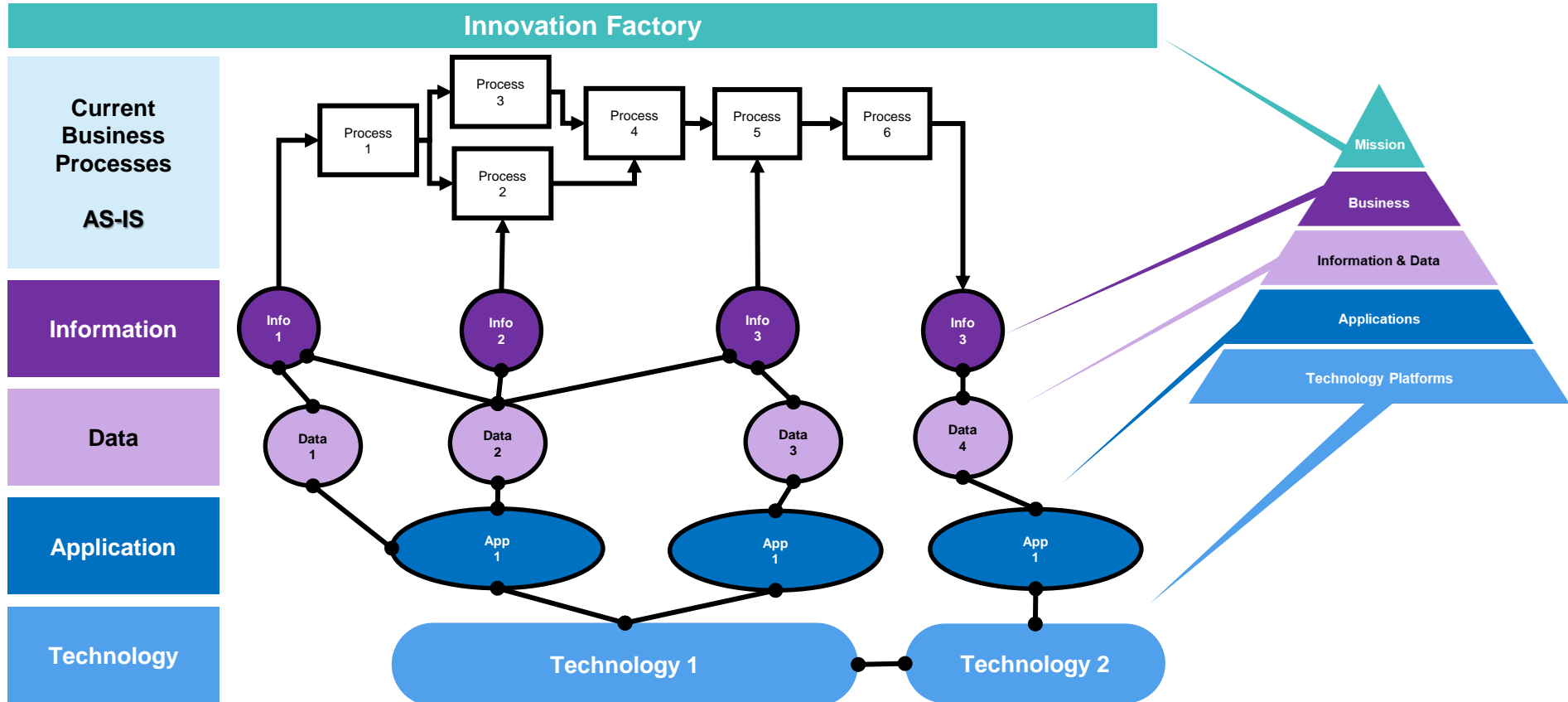
Functional Architecture

Drives Business Process Transformation



Business Process Transformation

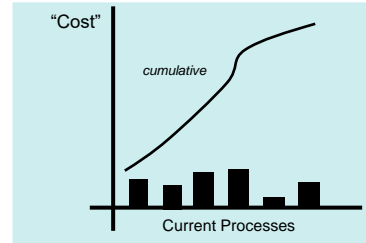
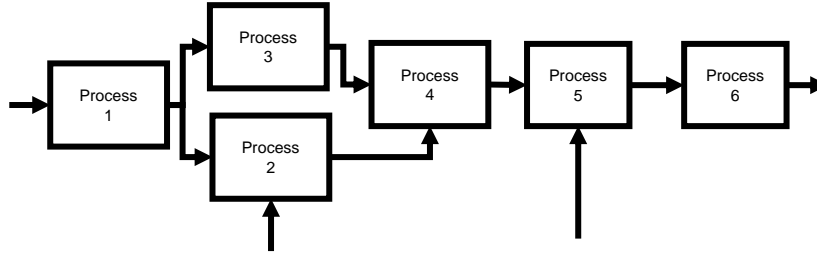
Enterprise Architecture Stack



Business Process Transformation

Analyzed with Integrated Descriptive and Analytic Models

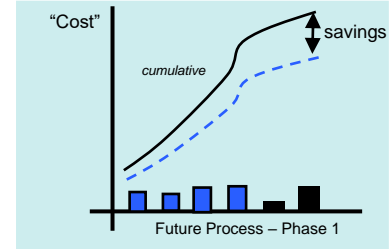
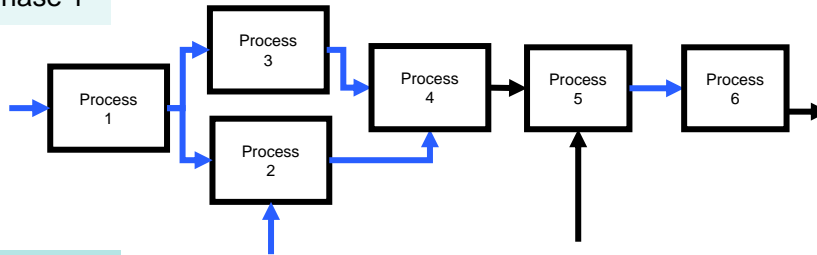
Current Processes
AS-IS



Manual
Labor Intensive
High Op. Cost

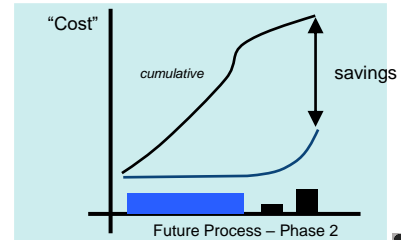
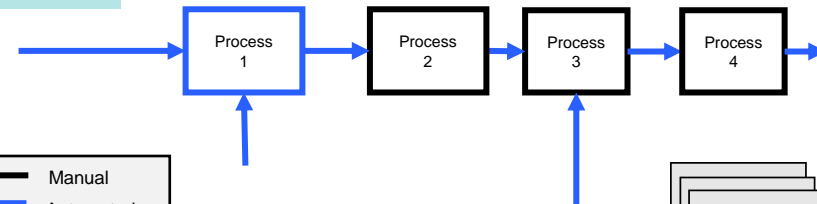
Future Processes
Transformation Phases
TO-BE

Phase 1

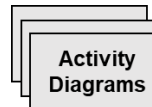
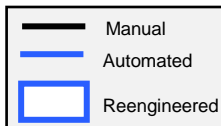


Automated
Information Flow
Same Processes
Lower Op. Cost

Phase 2



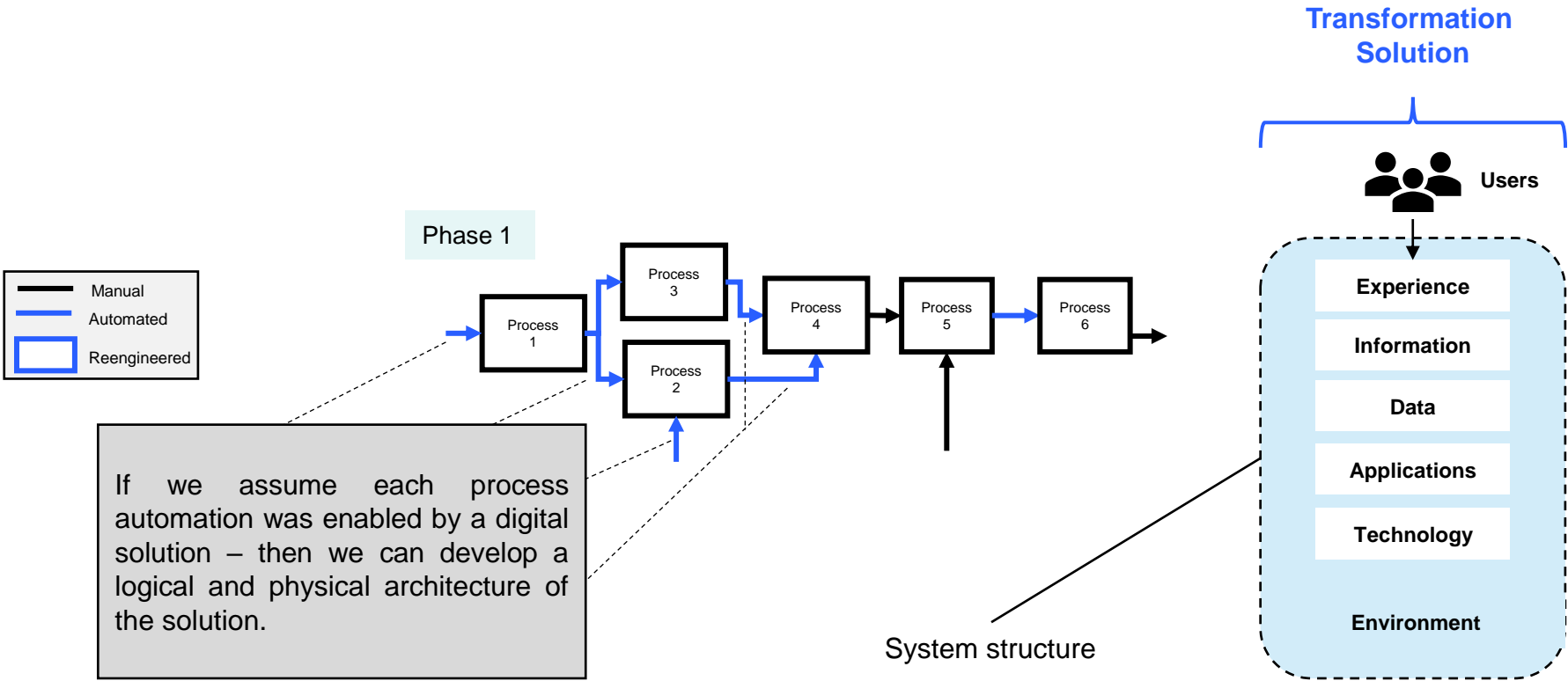
Fully Automated
Some Processes
Reengineered
Even Lower Op. Costs



$$Cost = f(x, y, z)$$

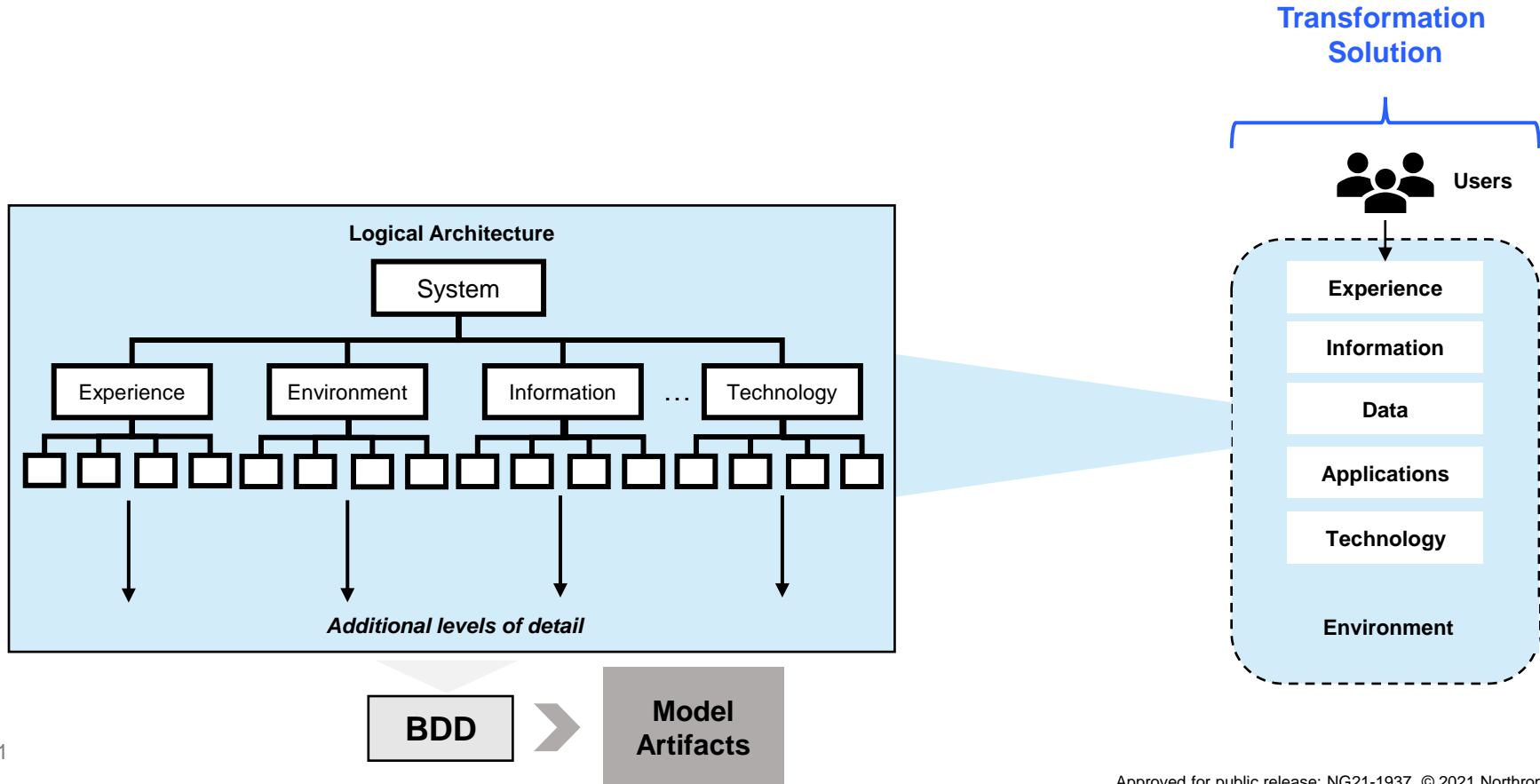
Business Process Solutions

Transformation Solutions Are Systems



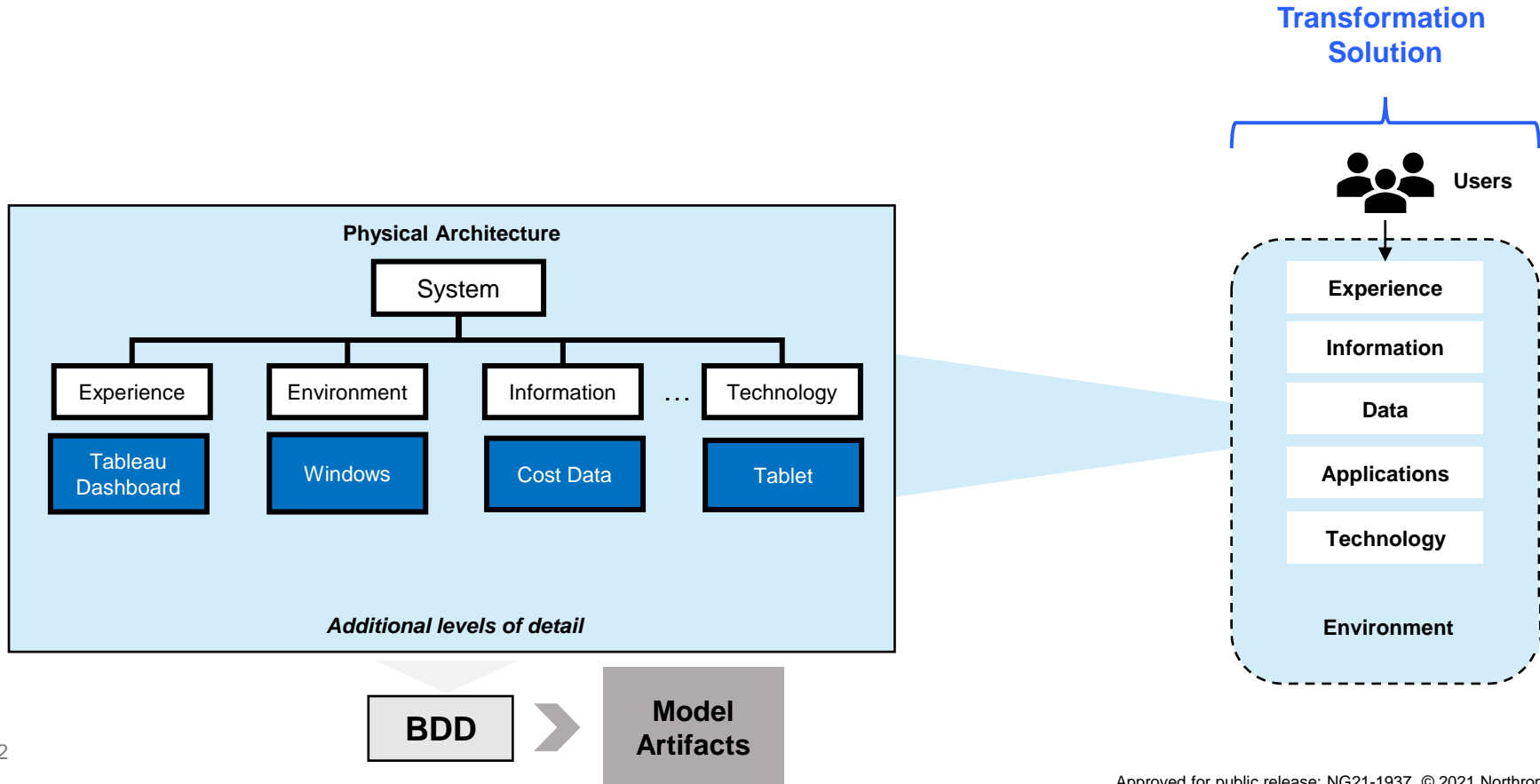
Business Process Solutions

System Logical Structure Captured in BDD

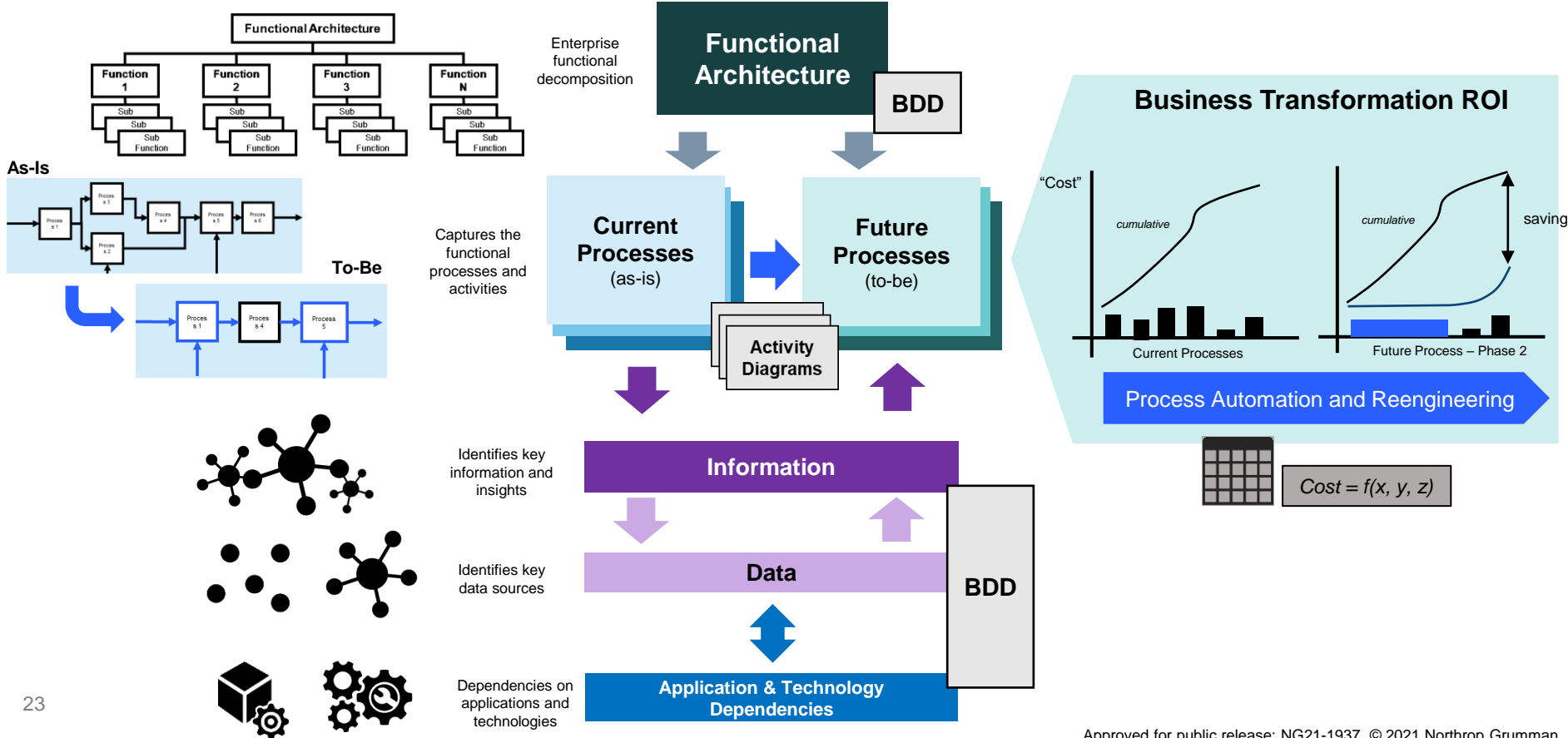


Business Process Solutions

System Physical Structure Captured in BDD

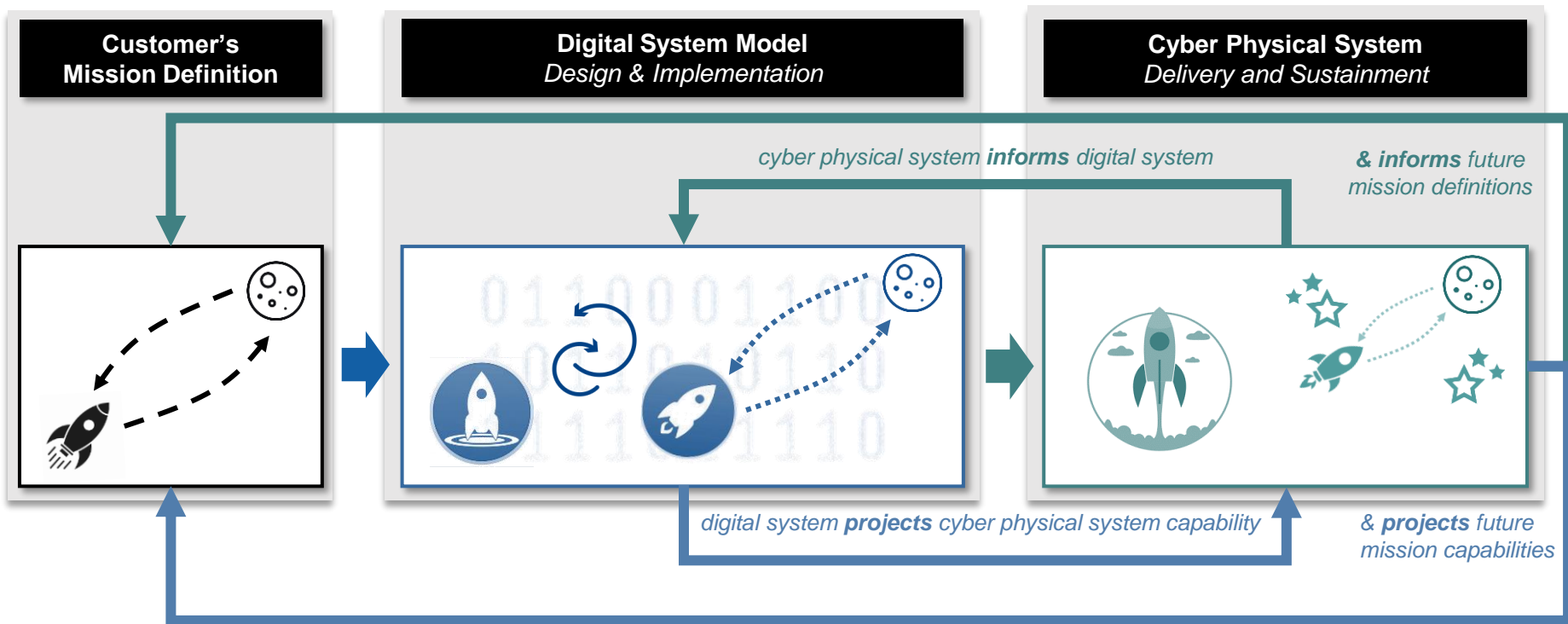


Business Process Transformation Summary

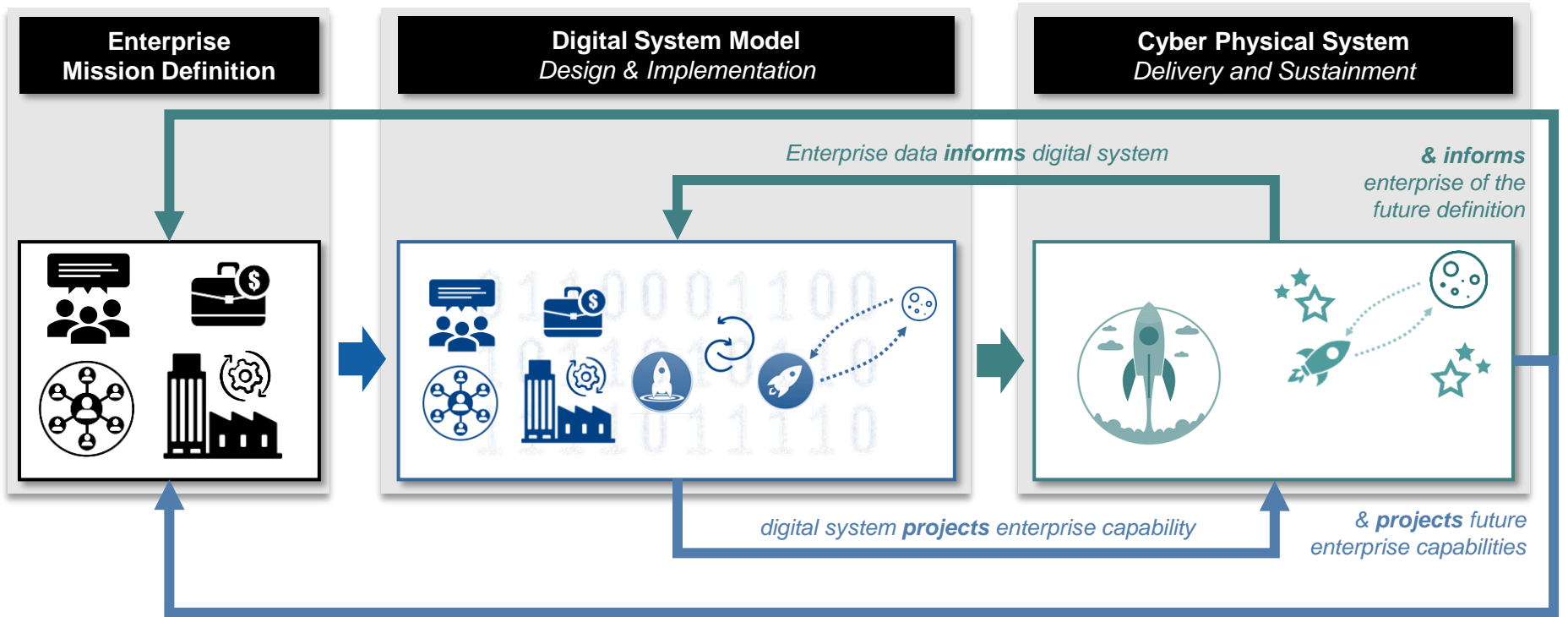


Enterprise Digital Twin – A vision of the future

Current Mission – *Digital Products, Services and Systems*



Next Mission – Digitally Enabled Org Models



Thank You!