Architecting an Education Enterprise

14th Annual National Convention

"Education 4.0: Challenges and Directions"

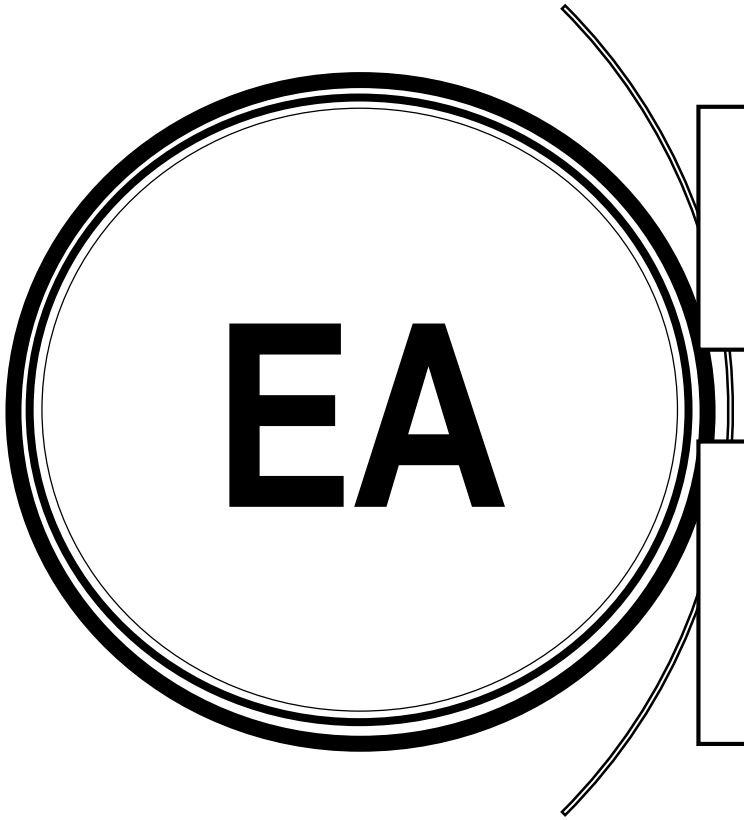
Allan B. Borra, ITS Director, DLSU

What we'll talk about

1. The State of Things: Who are my students now?
2. What is Enterprise Architecture?
3. How Does EA Drive Value?
4. An EA Framework: TOGAF
5. EA Journey of Other Universities
6. How Can We Make Our Own Journey

[Drivers] These are Our Students Now: The Digital Natives

What is Enterprise Architecture



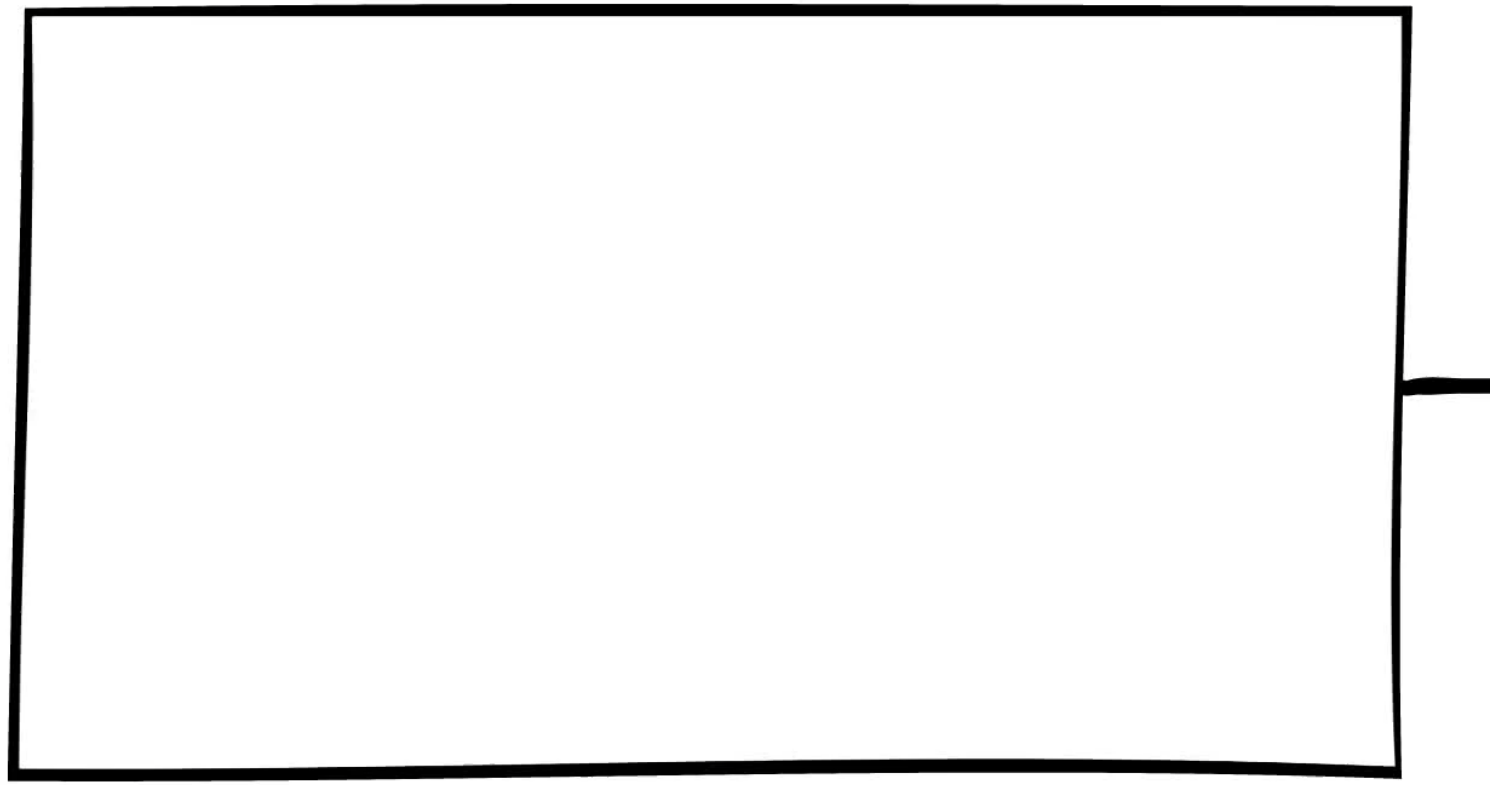
EA is the organizing logic for <u>business processes</u> and <u>IT infrastructure</u> reflecting the *integration and standardization* requirements of the organization's operating model

Source: EA As a Strategy

EA is a management framework that allows for structured planning and design aligning process, organizations, KPI / information, and technology in order to improve and maintain our ability to change.

Source: Sinag Solutions

Why Enterprise Architecture?



The 4 Areas of Enterprise Architecture

Business Architecture	• A description of the structure and interaction between the **business strategy, organization, functions, business processes, and information needs**
Data Architecture	• A description of the structure and interaction of the enterprise's major **types and sources of data, logical data assets, physical data assets, and data management resources**
Application Architecture	• A description of the structure and interaction of the **applications that provide key business functions and manage the data assets**
Technology Architecture	• A description of the structure and interaction of the **platform services, and logical and physical technology components upon which applications are deployed**

Source: The Open Group

EA IS LIKE CITY PLANNING

CITY LAYOUT


Manila
Fort Bonifacio
Brgy. 259
Brgy. 330
Brgy. 260
Brgy. 467
Brgy. 463
Brgy. 469
Brgy. 468
Brgy. 314
Brgy. 396
Brgy. 304
Brgy. 404
Brgy. 414
Binondo
Minor Basilica of St Lorenzo Ruiz
San Sebastian College - Recoletos de Manila
Arellano University
LRT-1 Doroteo Jose
LRT-2 Recto
LRT-1 Carriedo
LRT-2 Legarda
Quiapo
Quiapo Church
San Miguel
Escolta River Ferry
Pasig Ferry Lawton
Super Pinoy Fast Craft Shuttle Terminal
LRT-1 Central Terminal
Bahay Pangarap
Manila City Hall
Ermita
Adamson University
Intramuros Walls
Central Lagoon
LRT-1 United Nations Avenue
Pearl Manila
Paco
Brgy. 831
Brgy. 843
Brgy. 822
Brgy. 678
Brgy. 671
Philippine Columbian Association
San Gregorio
Estero de Tanque
Estero de Santibañez
Estero de Provisor
Estero de Concordia
Paz Mendoza Guazon
United Nations Ave
Padre Burgos St
McArthur Bridge
Nagtahan Bridge
Lerma St
Recto
Guadalupe Viejo
Guadalupe Nuevo
South Cembo
Cembo
West Rembo
University of Makati
EDSA
Kalayaan Ave
Pinagkaisahan
Pitogo
MRT-3 Buendia
Fort Bonifacio
British School Manila
Market Market Mall
McKinley Road
Manila Polo Club
Manila Polo Club Baseball/ Softball Field
East Polo Field
Pembo
Pasteleria La Nuova
Manila American Cemetery & Memorial
Korean Embassy
Consular Rd
Ipil Rd
Tamarind Rd
Rizal Dr
32nd St
5th Ave
Carlos P. Garcia Avenue
26th St
25th St
24th St
28th St
30th St
31st Street
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Lane C
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Intsia Road
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Jacinto St
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Anastacio
Government Noble
Santa Rita St
Honda
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Guingua
Cambridge Cir
Danlig
Amapola
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Adalia
Estrella
Taurus
Leo
Libra
Zodiac
Stella
Antares
Asteroid St
Canopus
Astra
Planet
Mercedes St
Galaxy
Kawayan Rd
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Harvard Rd
Forbestown Rd
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Nagtahan Bridge
Buencamino
Matienza
Duhat
Lacson Ave
Mabini
Alcantara
Extrema Dura
F. Cayco
Centro
Galicia
San Antonio
La Paz
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Sanchez
Guillermo Masangkay
Alvarado
Valeriano Fugoso
Pedro G.
D. Jose
R. Papa
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Makati Central Business District
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Ayala Avenue
Makati Avenue
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Nichols
Fort Bonifacio Global City
Bonifacio Global City
Taguig City
Pateros
Makati City Hall
Makati Medical Center
Asian Institute of Management
Ateneo de Manila University
De La Salle University
Miriam College
Philippine Stock Exchange
Philippine Heart Center
Lung Center of the Philippines
National Kidney and Transplant Institute
Philippine General Hospital
University of the Philippines Manila
University of the Philippines Diliman
Quezon Memorial Circle
Manila Zoo
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Redemptorist Church
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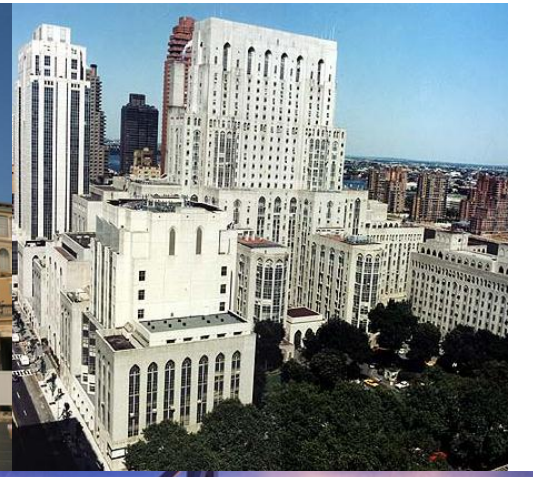
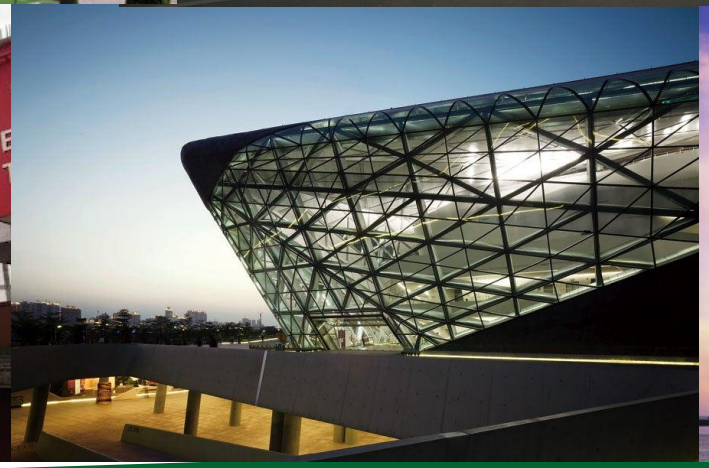
BUILDING ARCHITECTURE







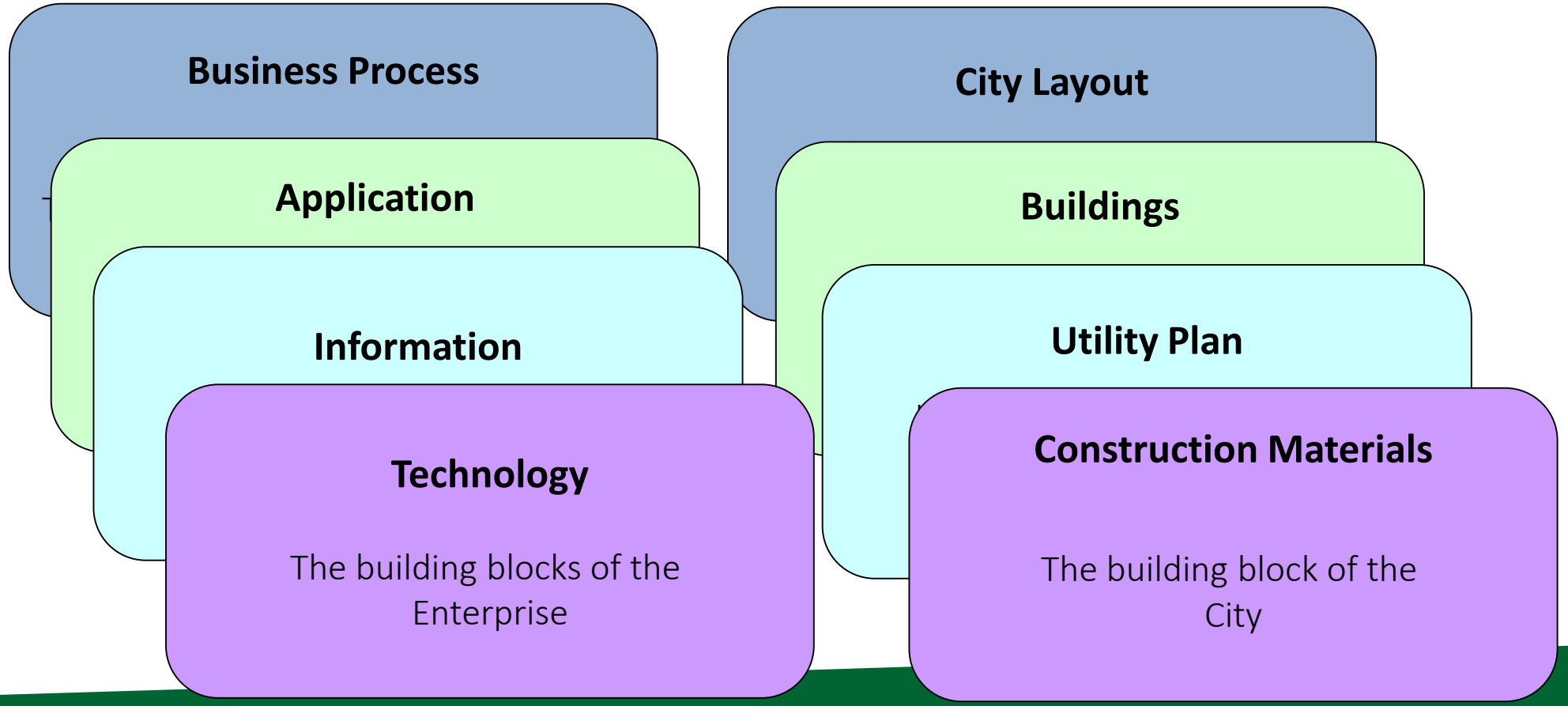

UTILITY PLAN

CONSTRUCTION MATERIALS



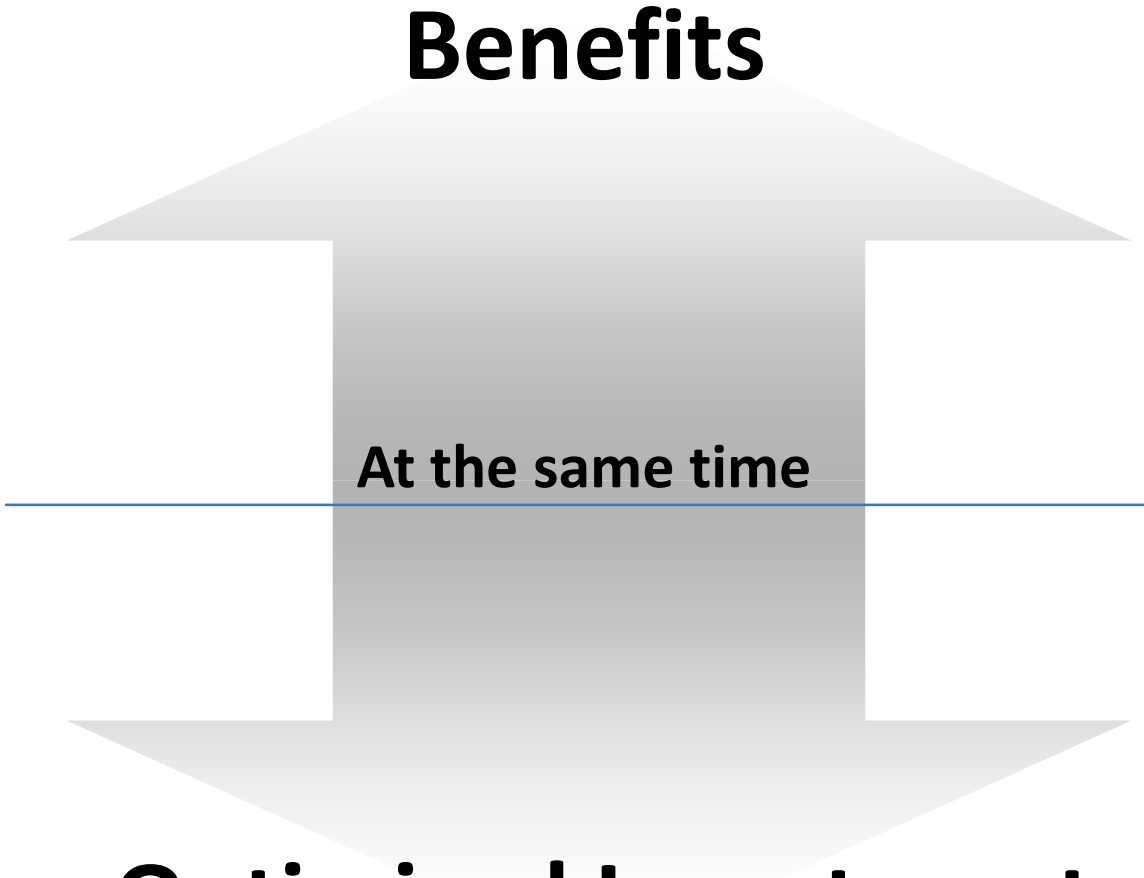



OUR CITY PLANNING ANALOGY TO EA

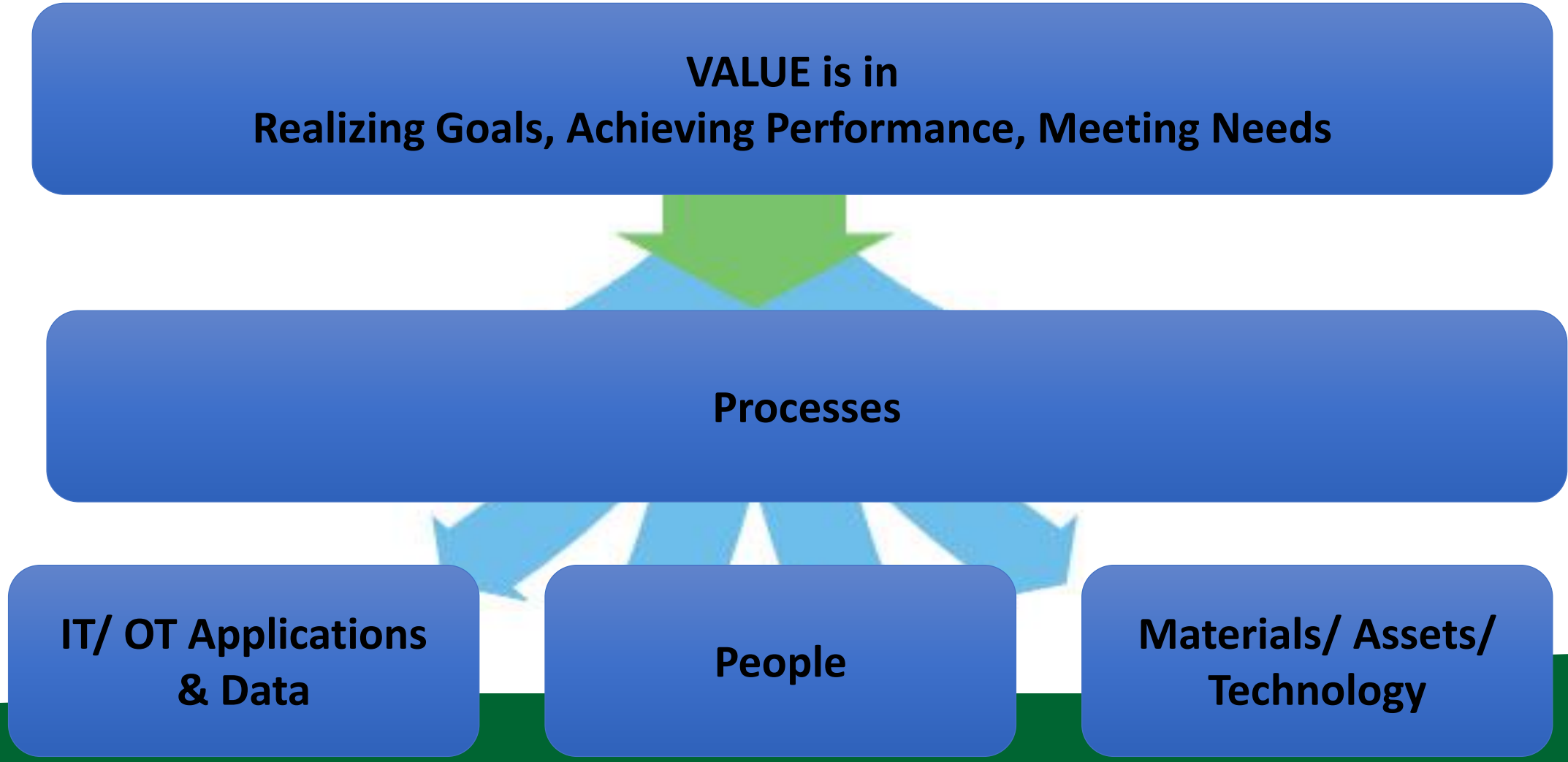


The Magic Formula

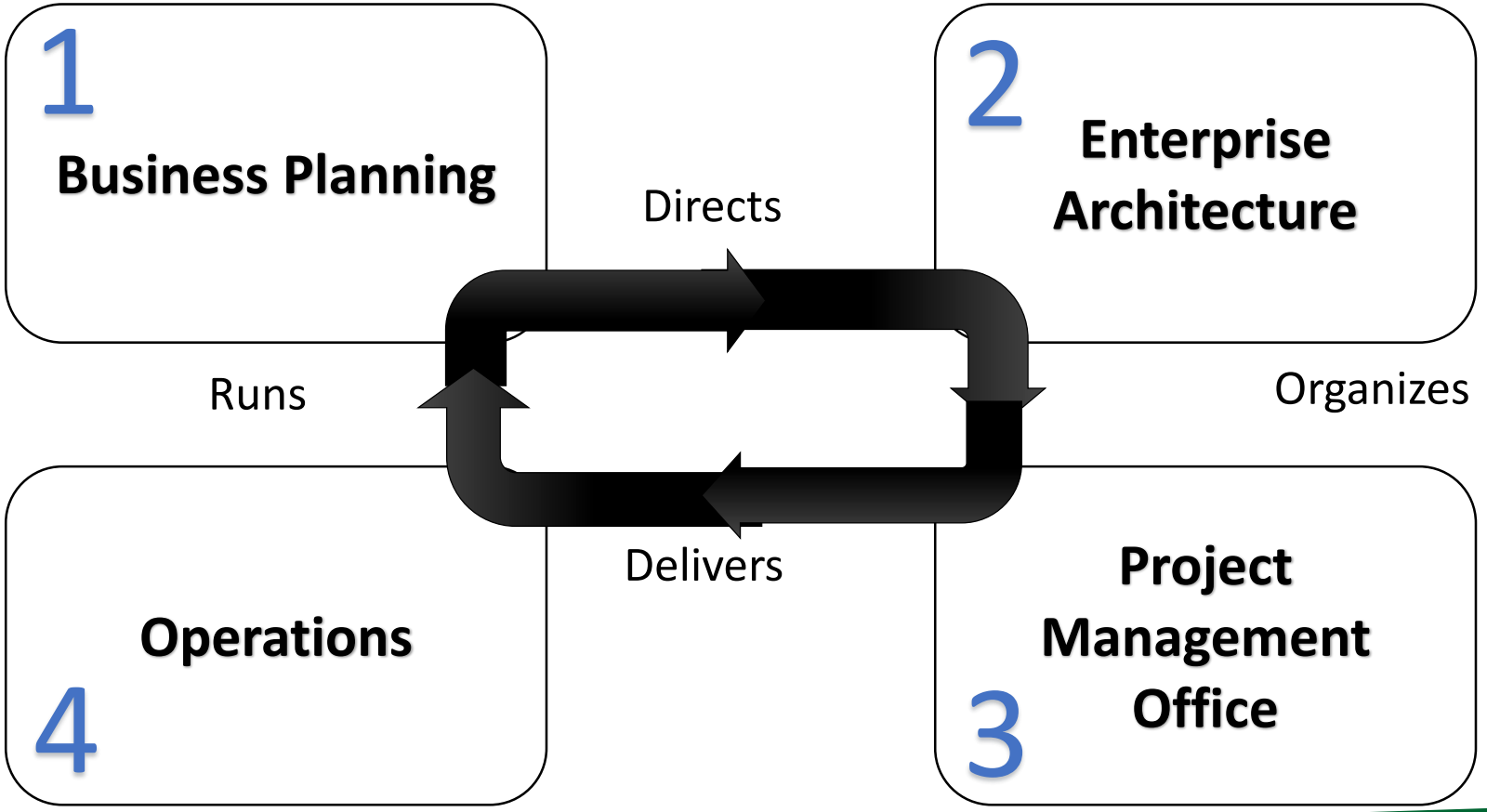
VALUE =



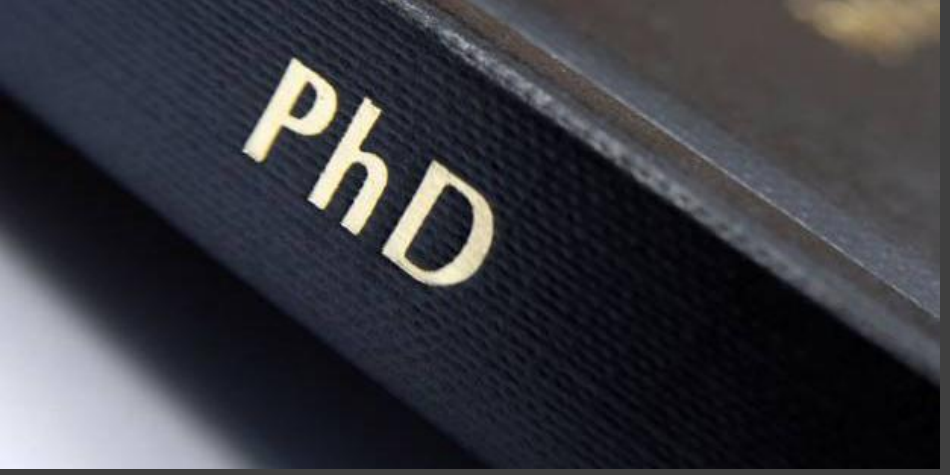
Value = f(Processes are working!)



The Big Picture: How we will drive Value

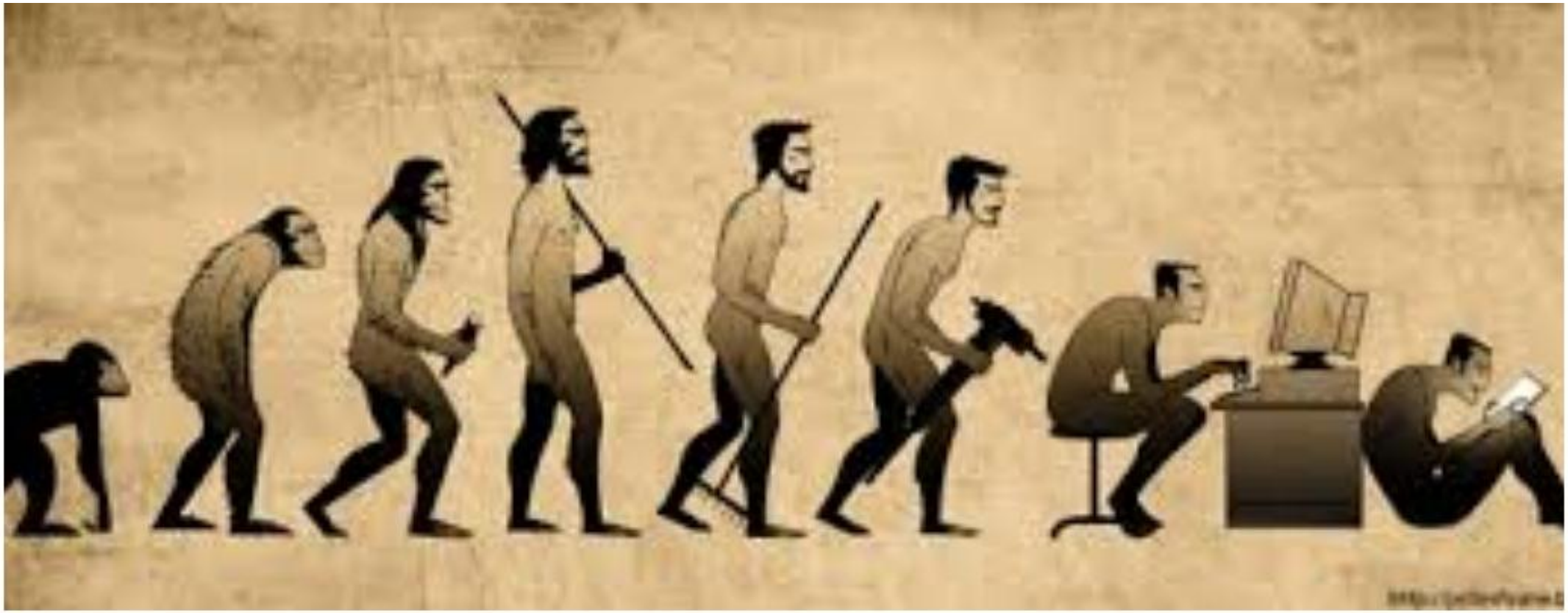


Source: Open Group



The Value we aim to Achieve for the EAIR

- Overall Roadmap to support the DLSU Digital Transformation
- Best In Class Human Resources Processes
- Integrated Financials and Procurement
- Tightened Financials Controls
- Improved Student Lifecycle Processes
- Governance Support on the Implementation Projects



The Case for EA

The Journey is perilous
And we have a lot of casualties!

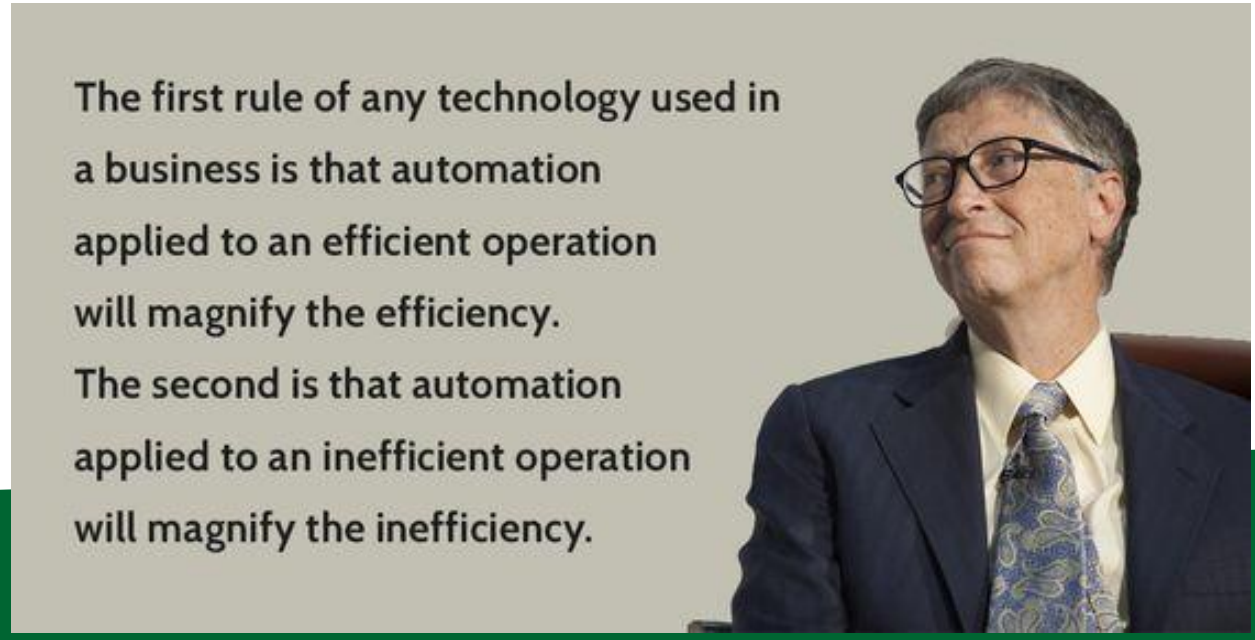
- More than 70% of Digital Projects fail*
- We spend millions in our budgets and end up decreasing our brand equity (damaged reputation)

- We may succeed for the 1st month but will be able to sustain it for 1, 3, 5 years?

*Forbes Magazine

Why Change to Digital Fails

- Business Planning to Project Management Cycle
  - Lost Opportunities in asset re-use and in consolidation of projects
  - Businesses processes more often are not split by organizational lines
- Operations Readiness
  - No/ Low organization Buy-in
  - Not embedded in
    Reward structure



Why Change to Digital Fails

- Overtaken by Technology and Market Forces
- One or more aspects of the Transformation missed

The need for a Framework

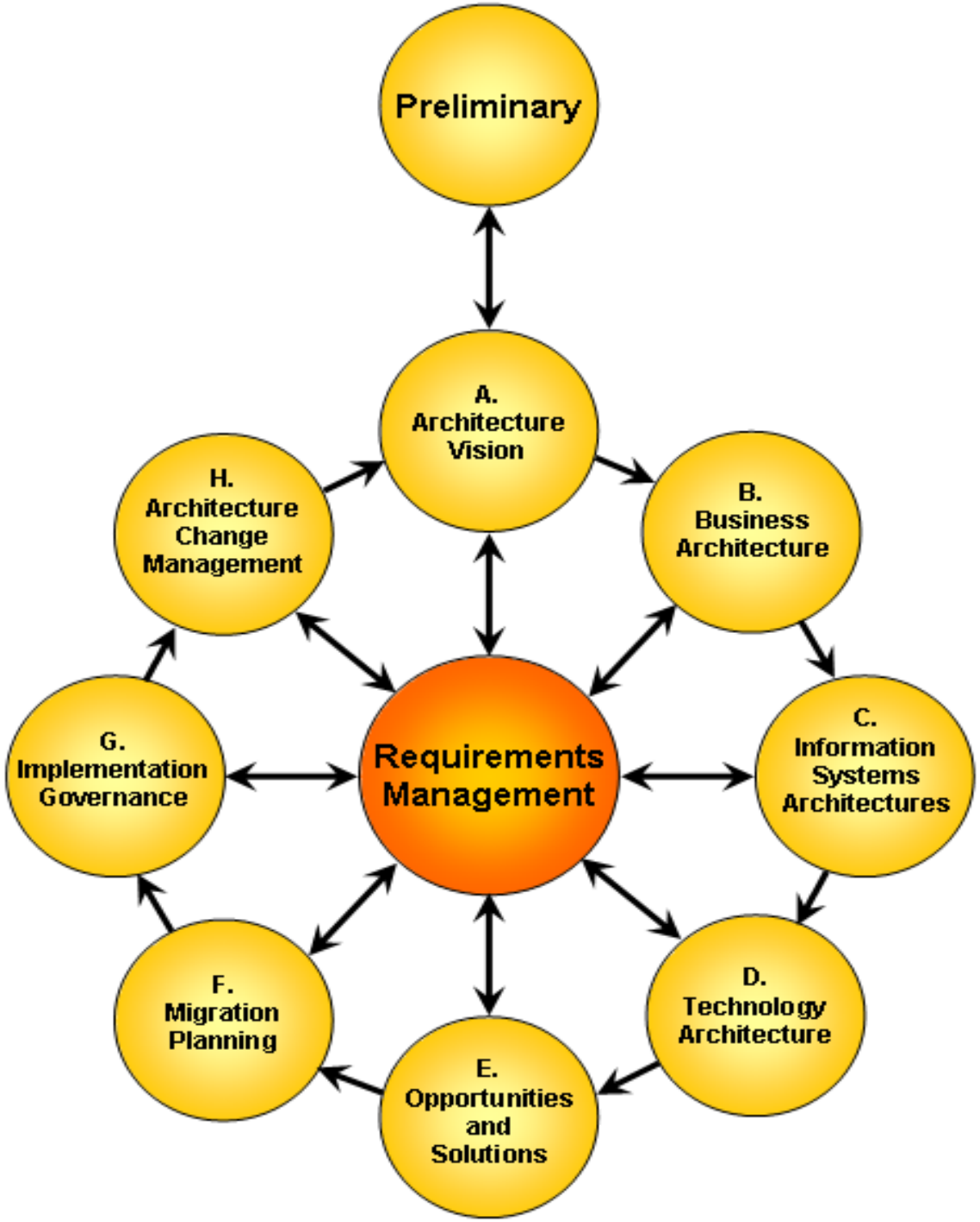
- Digital journeys cost millions and tons of people effort
- We need a way to know that we are winning!
- We need it to be repeatable

What is TOGAF?

TOGAF helps evolve an Enterprise Architecture because it is:

- Based on Open Standards
- Technology, Product, and Vendor-neutral
- Scalable, modular, flexible and agile

What is TOGAF?



TOGAF ADM

Architect **D**evelopment **M**ethod

One of the main components of TOGAF

Describes **HOW** to perform EA, through sequence of phases

is iterative, across the who process, between phases and within phases

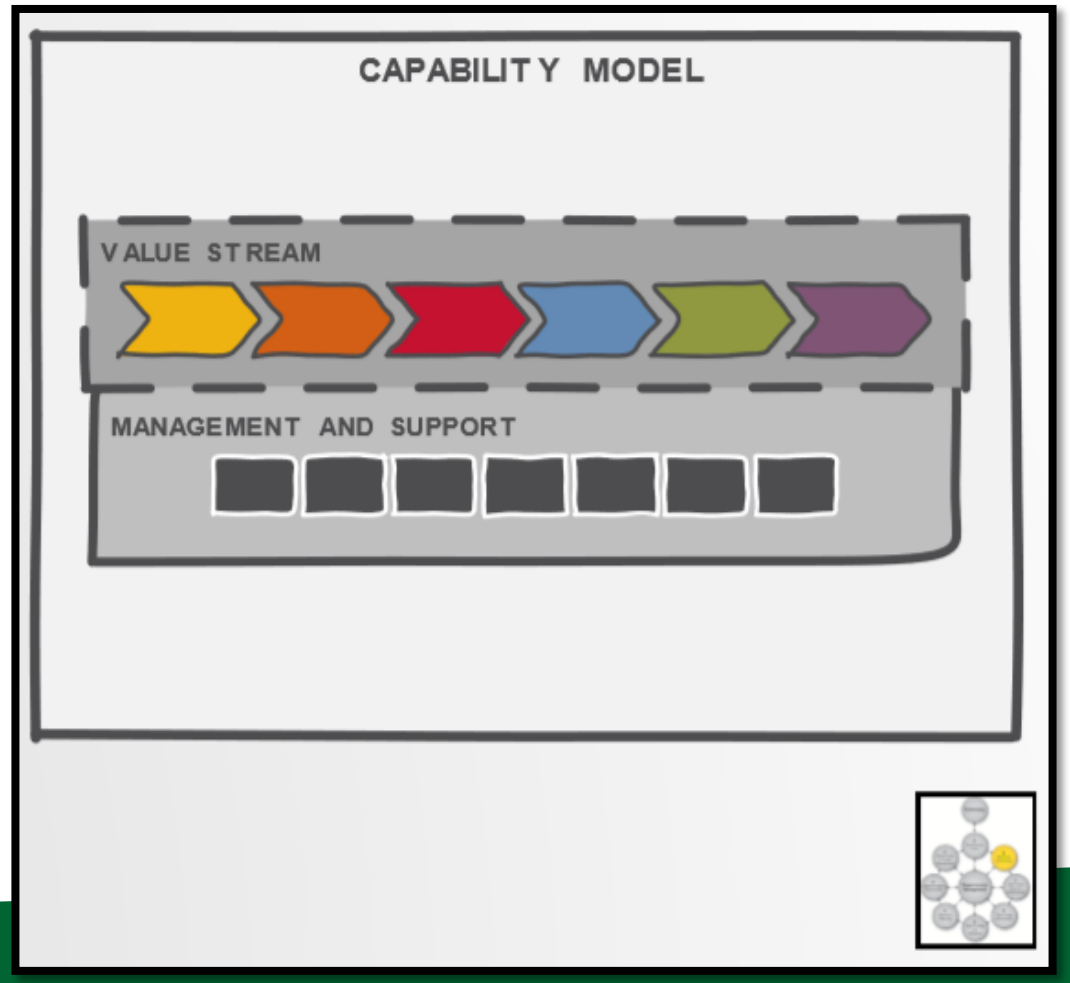
Each phase is completed in order

Phases A, B, C and D are concerned with specific Architecture Domains and Layers.

Business Architecture

Strategy Layer

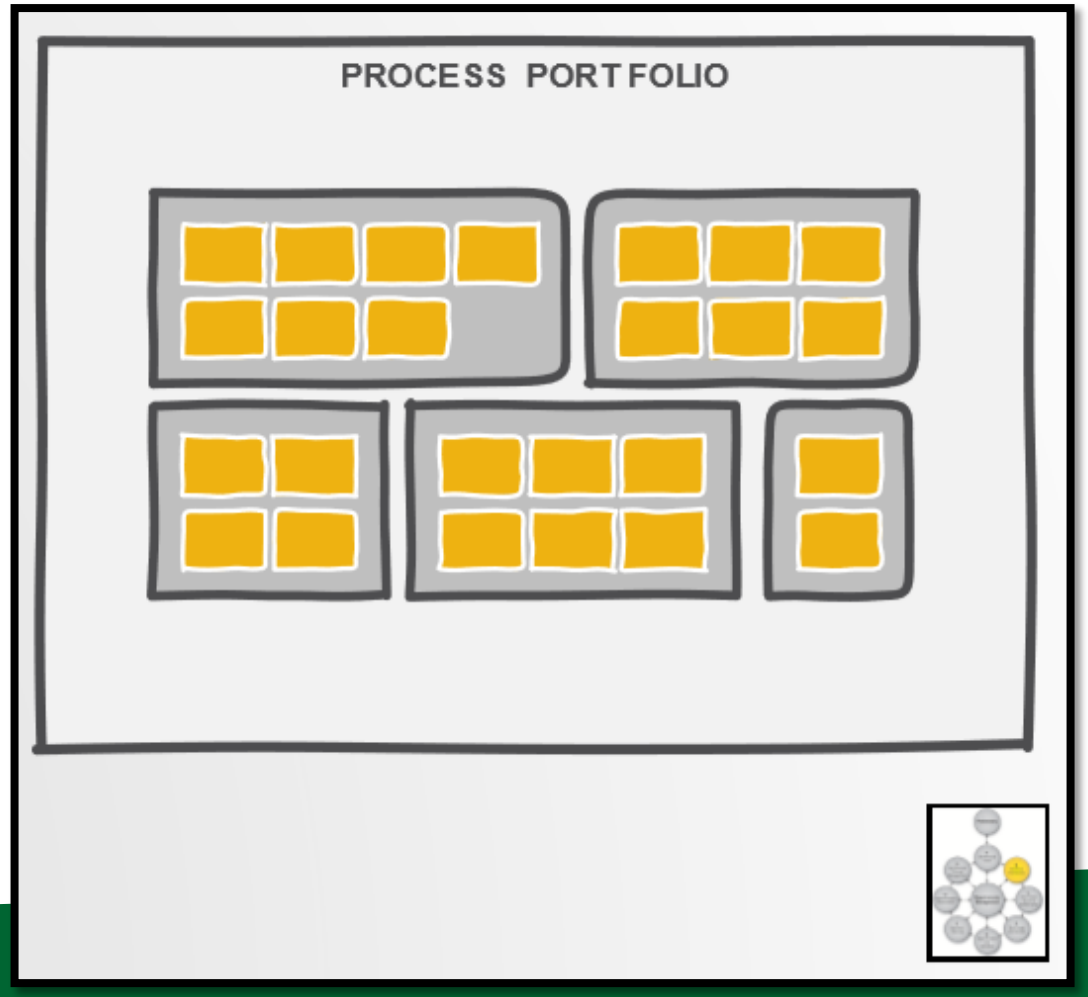
- used to model the **capabilities** of an enterprise, and how they are to be changed in order to achieve the business goals
- Each capability is critical to the success of the entire enterprise
- Describes **WHAT** the enterprise does [not what does it]
- It does not have any organizational structure bias and is **independent of business processes, applications and infrastructure platforms.**



Business Architecture

Business Layer

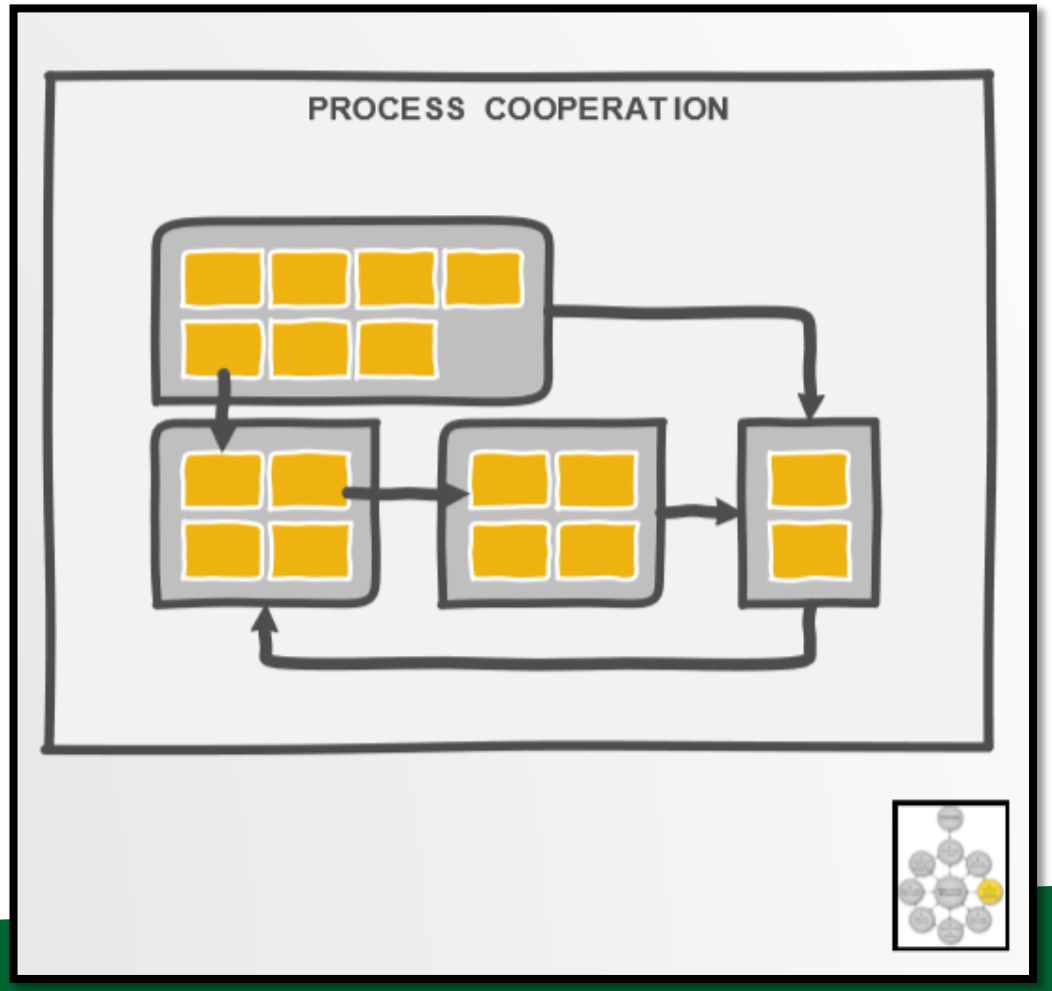
- Describes **HOW** each capability is realized
- A **business process decomposition** utilises a common language to communicate and define business processes comprehensively and without redundancies
- It does not show triggering or information flow between business processes, nor does it show their ownership
- Each business process decomposes further into a granular collection of related, structured activities or tasks which are executed by roles across the enterprise **[BPMN or Swimlane diagrams]**



Information Architecture

Relationships between business processes describe the interplay between them and also the high-level **information flowing between each**

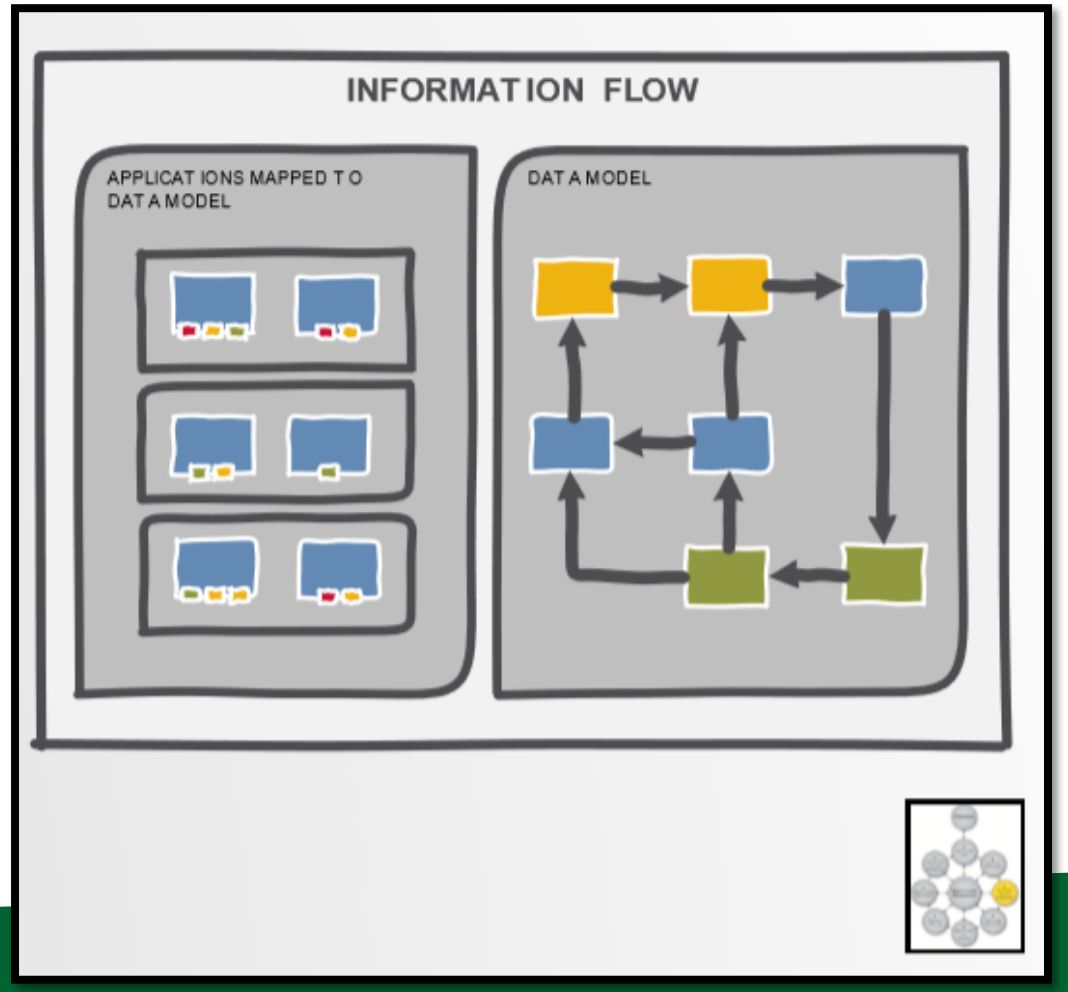
Information flow between business processes indicates the **existence of a data interface provided by one or more applications**



Information Architecture

Master Data is also mapped between the application and business process layers

We can then determine the **degree of data fragmentation** and how tightly this is managed across the enterpris

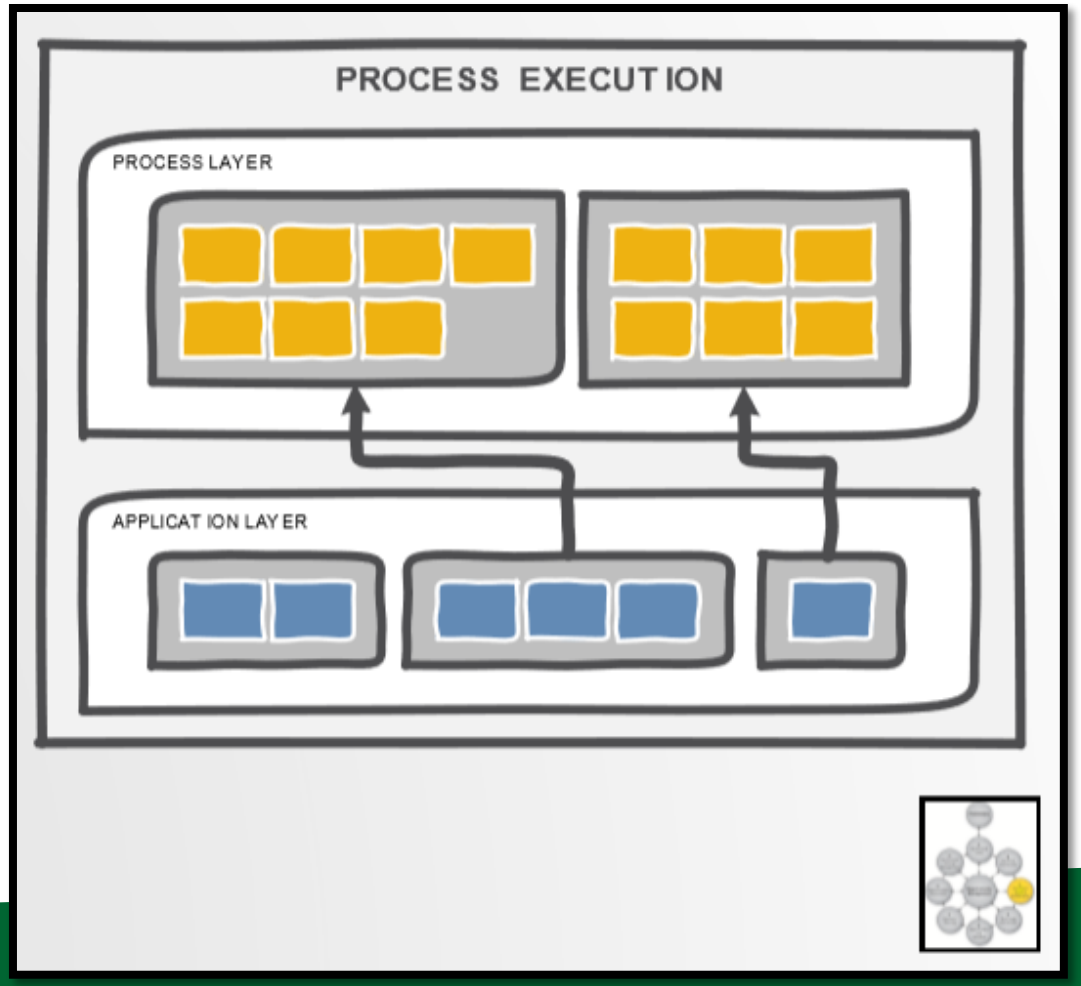


Information Architecture

Application Layer

- provides a clear understanding of the **applications that directly support the execution of business processes**

- also identifies **data interfaces between each of the applications** as well as the **type of information passing between each**

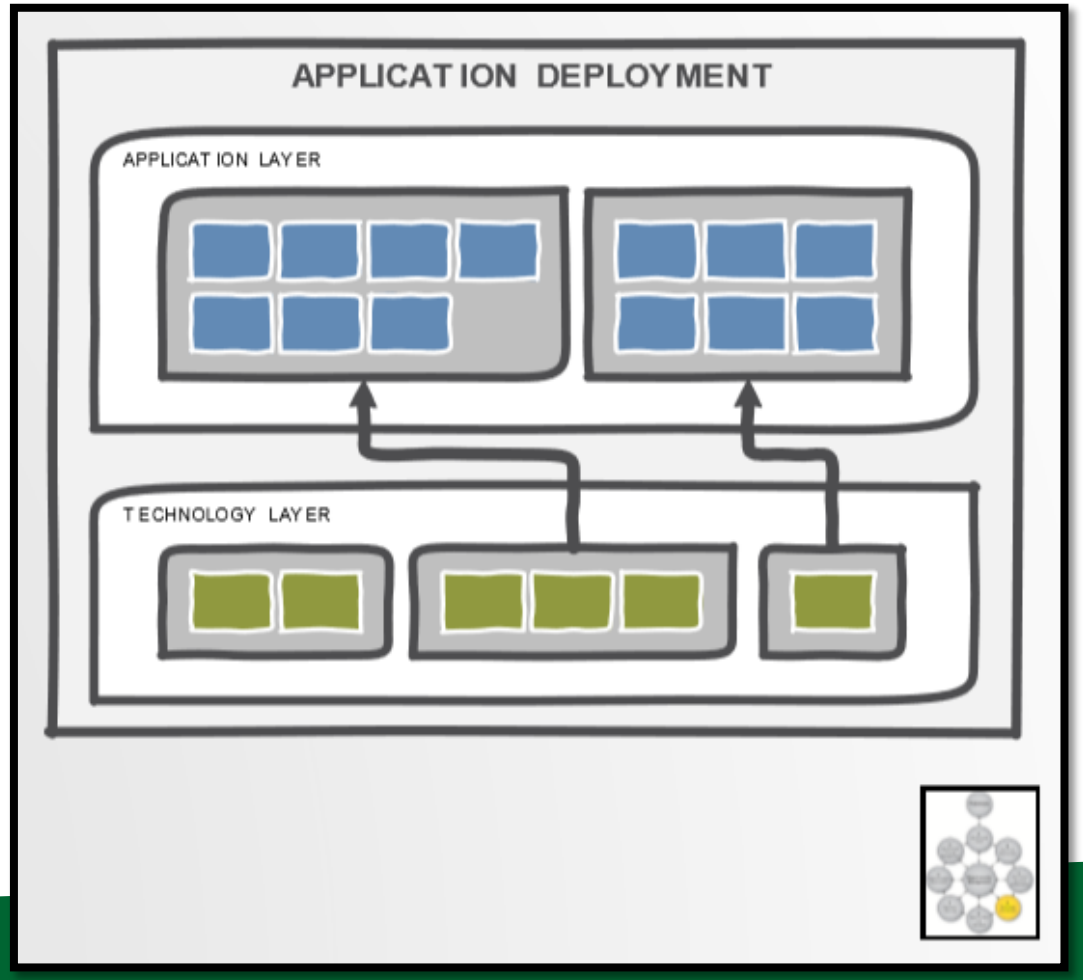


Technology Architecture

Technology Layer

- identifies the **infrastructure required to directly support the operation of the enterprise** through its applications

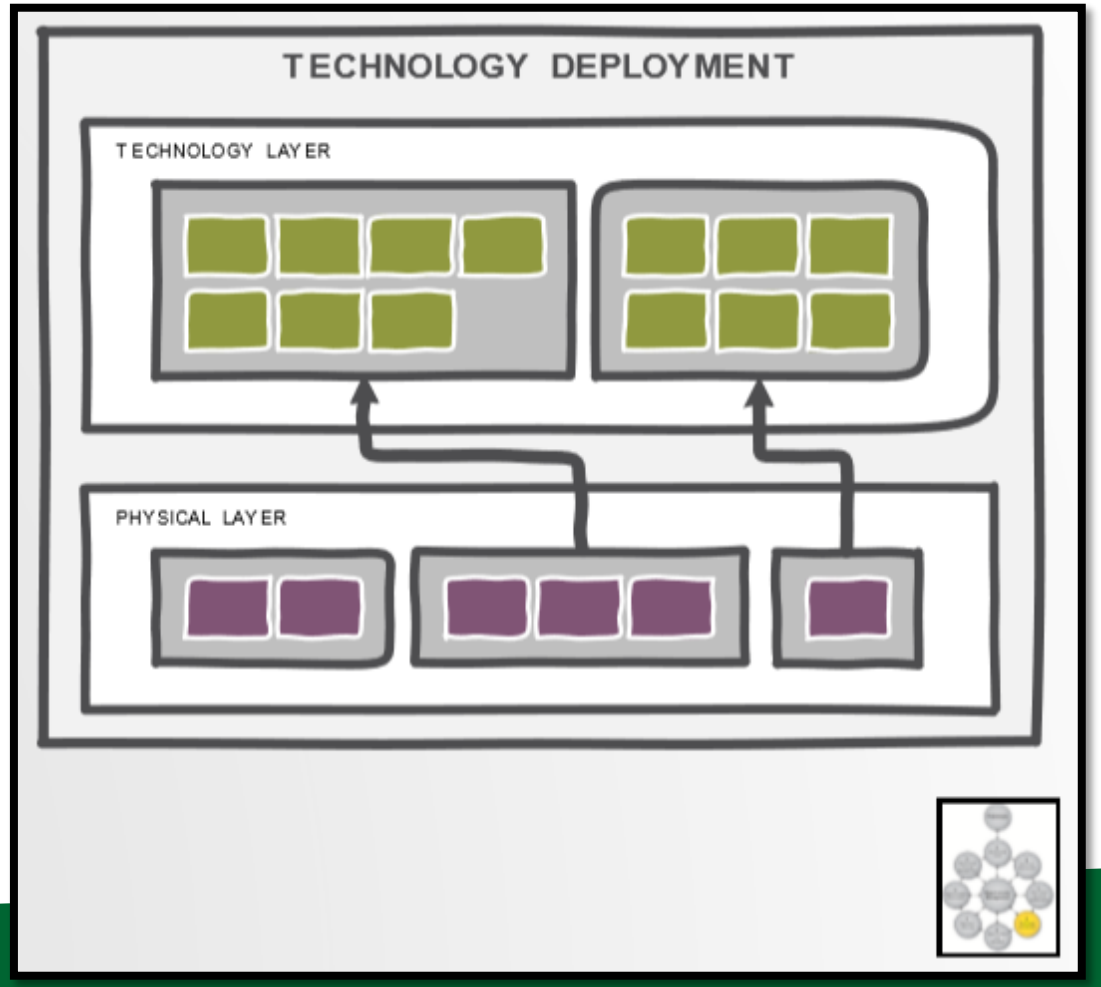
- It incorporates **physical hardware** such as specific servers, databases, firewalls and networks



Technology Architecture

Physical Layer

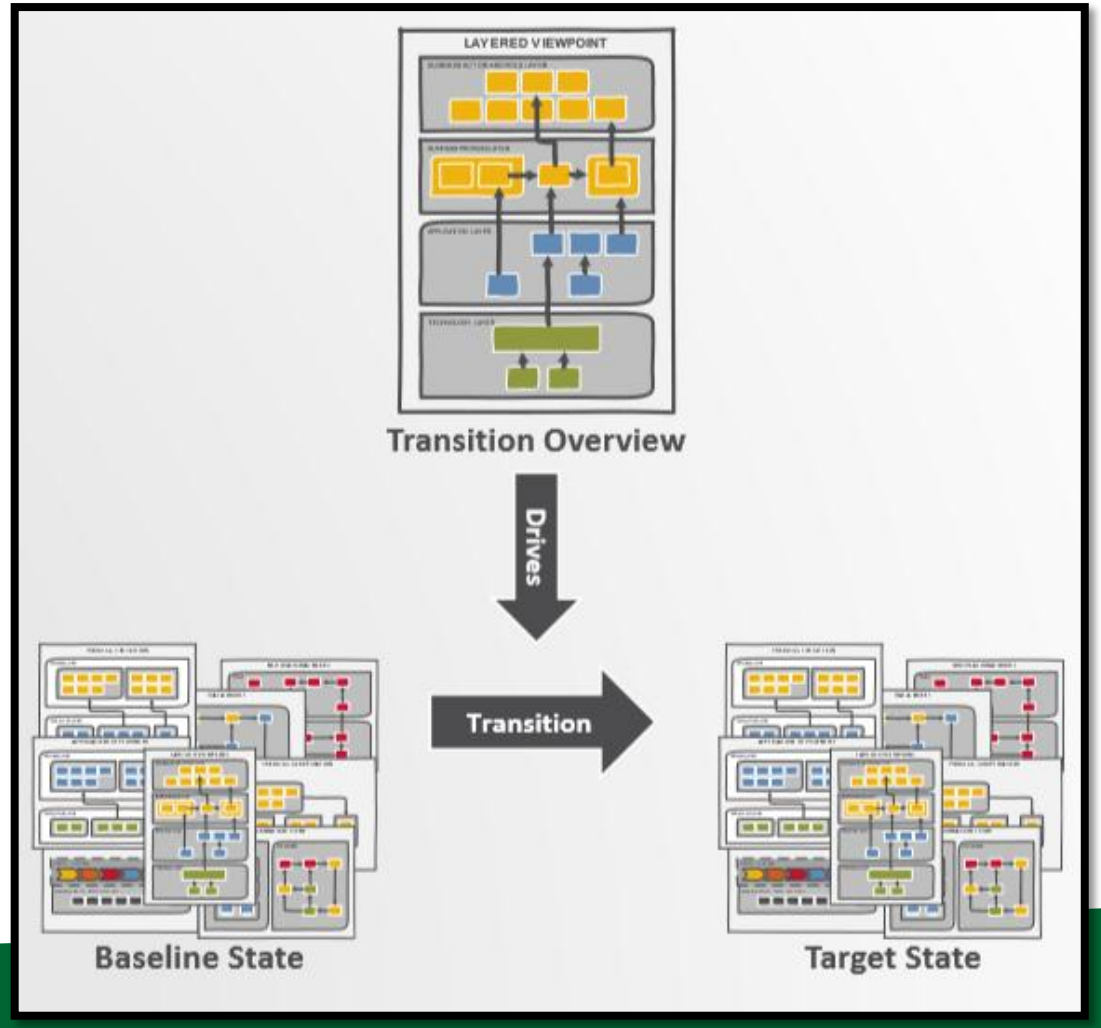
- identifies tangible elements such as **facilities, materials and equipment** that are used to support the operational aspects of the enterprise



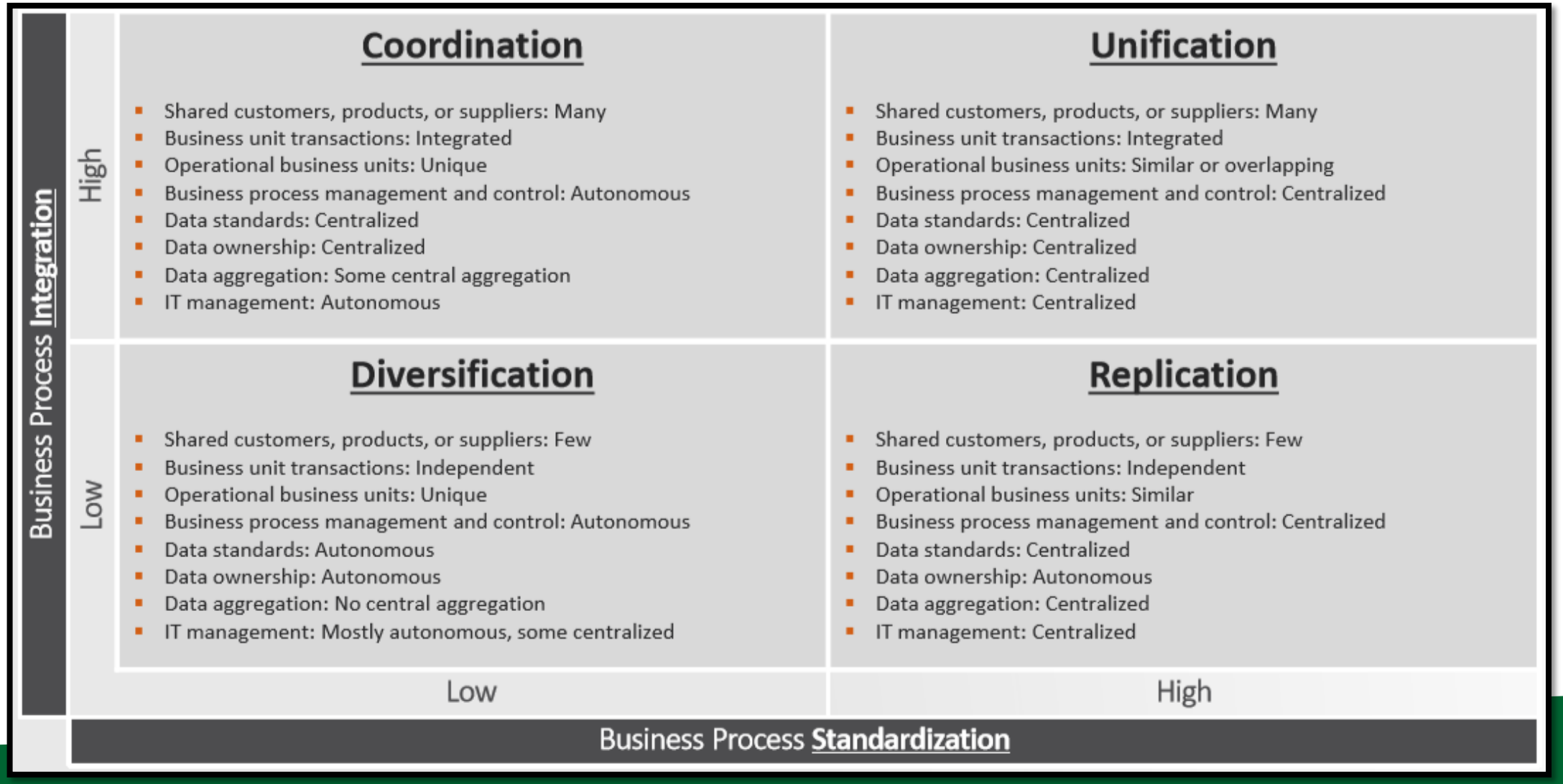
Transition Architecture

describes a **transition from the baseline state of an enterprise, to a target state**

It may incorporate any of the layer of the Enterprise Architecture and will often require a change to **business processes, information, applications and technology**

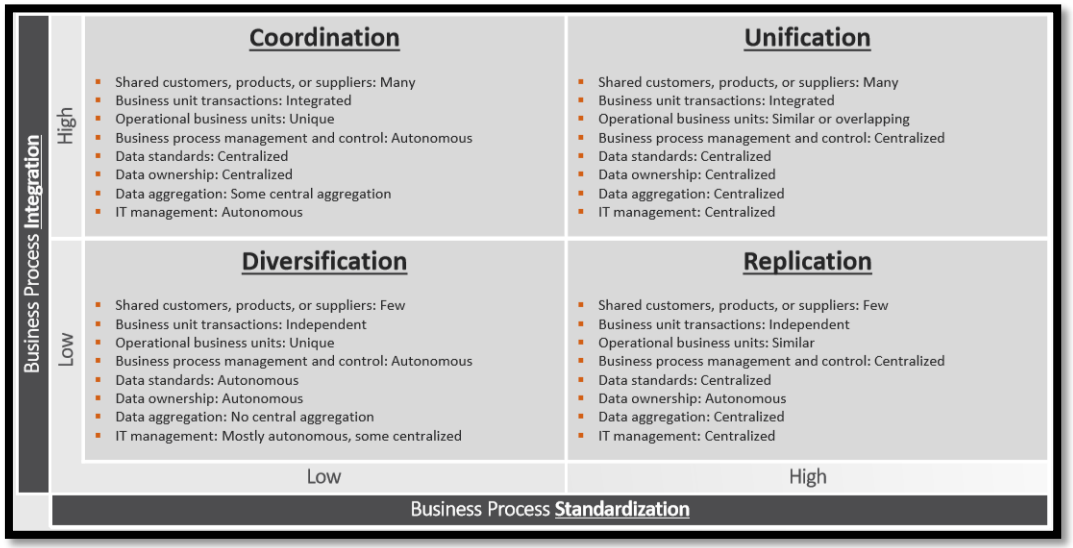


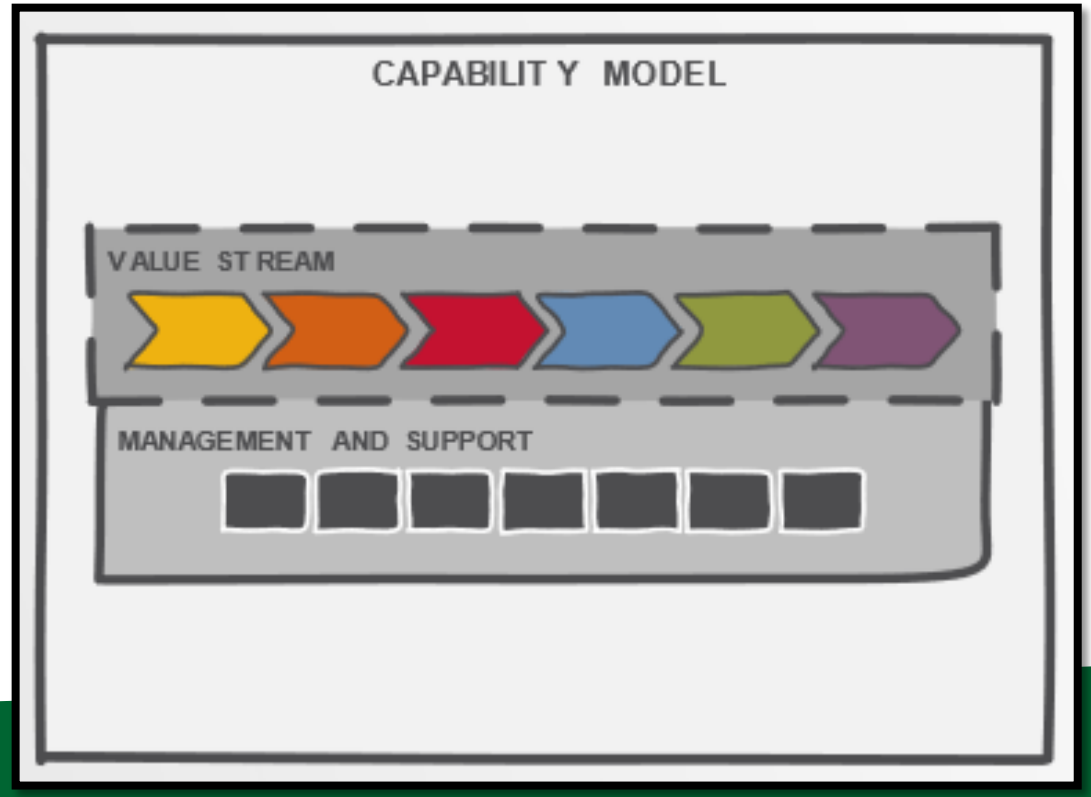
Transition Architecture



Capability and Business Process Model

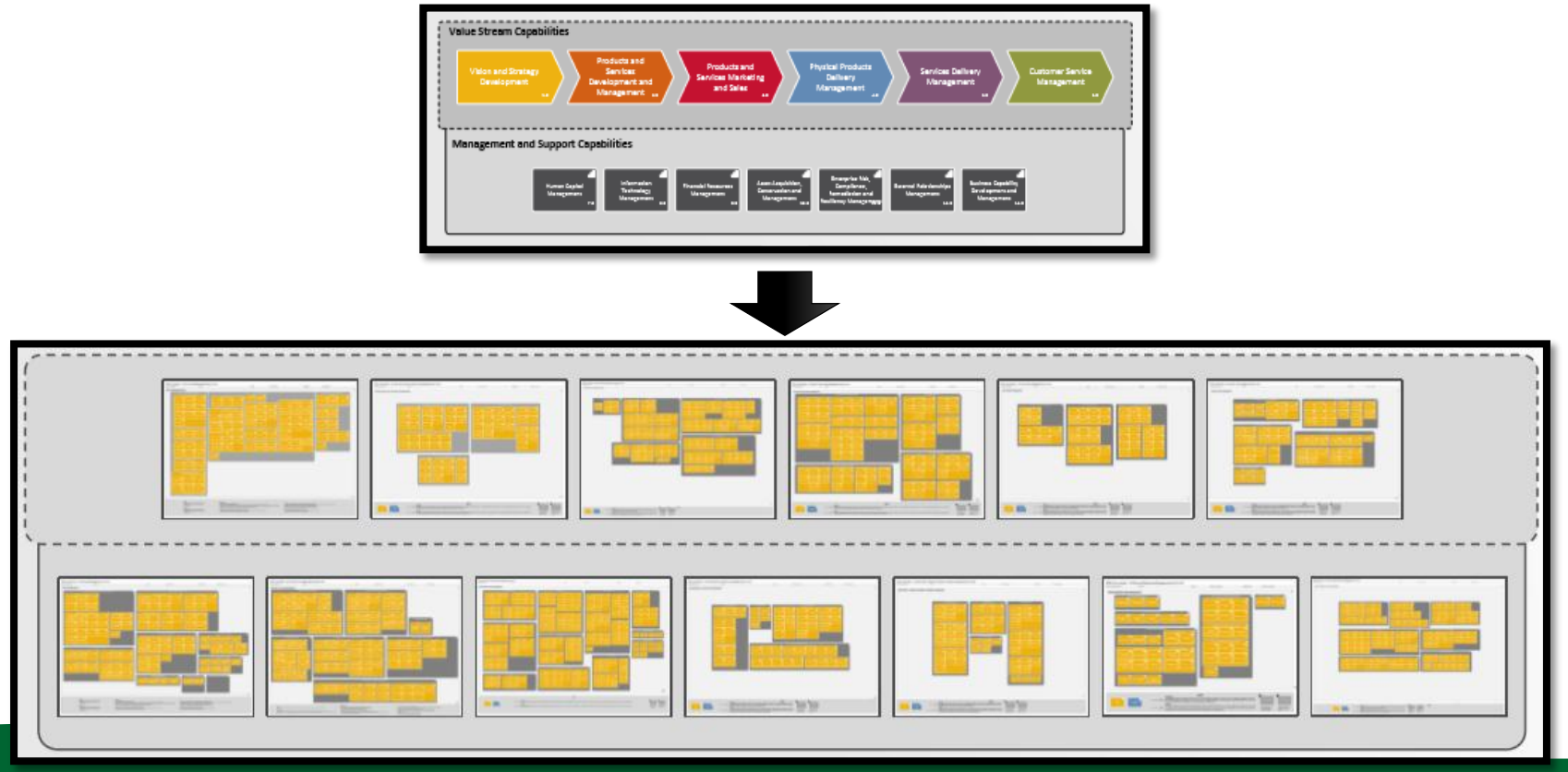
The **Operating Model** guides the Capability Model that is needed to **achieve Strategic Objectives**





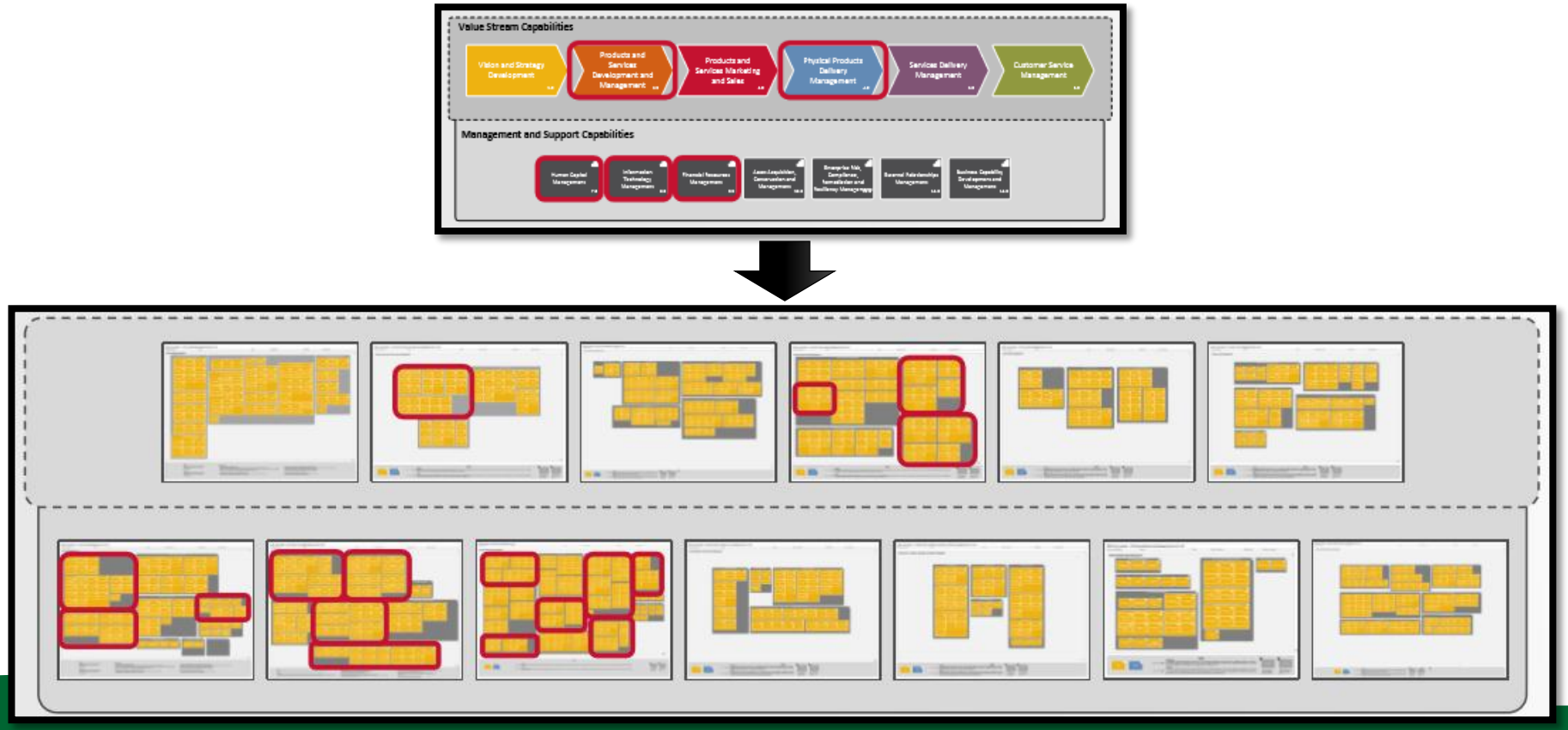
Capability and Business Process Model

The **Capability Model** drills down to the Business Process layer



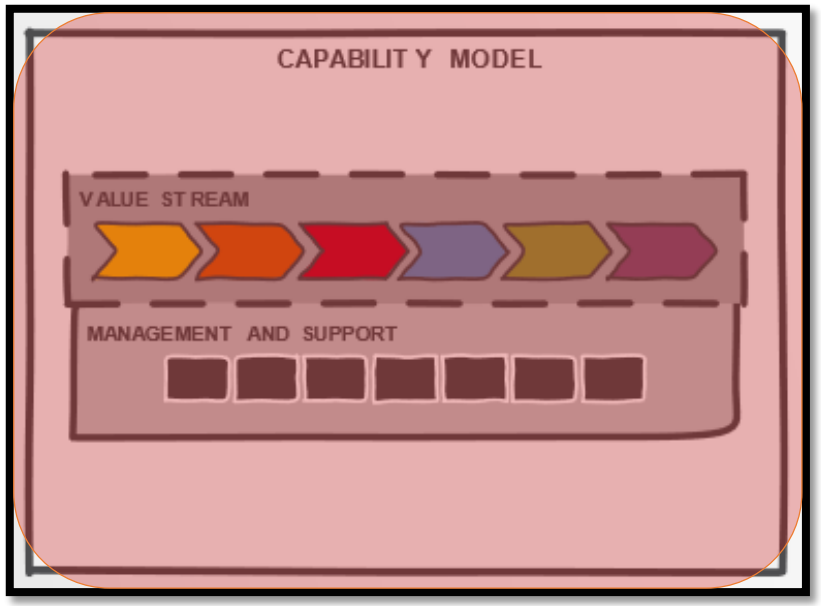
Capability and Business Process Model

The target state will highlight the Capability uplift required.



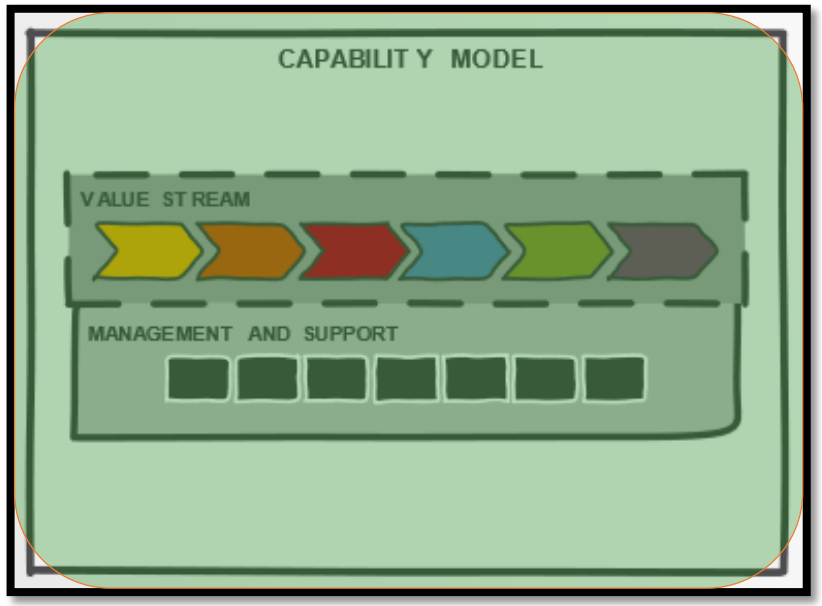
Capability and Business Process Model

The uplift required across various Capabilities is realized through the creation of Architecture Roadmaps



Current State

Transition

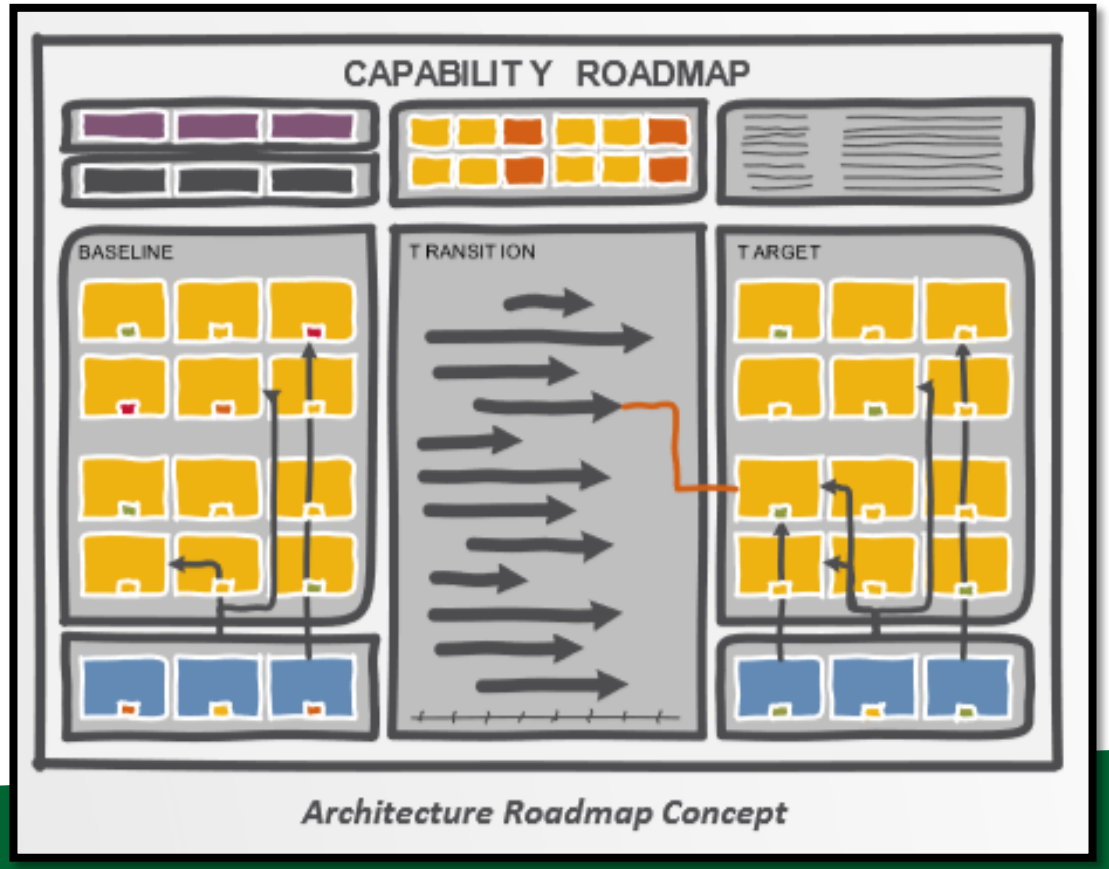


Future State

Architecture Roadmaps

An **Architecture Roadmap** is a visual tool that is used for clearly identifying and communicating how Strategic Objectives will be achieved

Depending on the Roadmap, time required for creation ranges from 3 days to one month

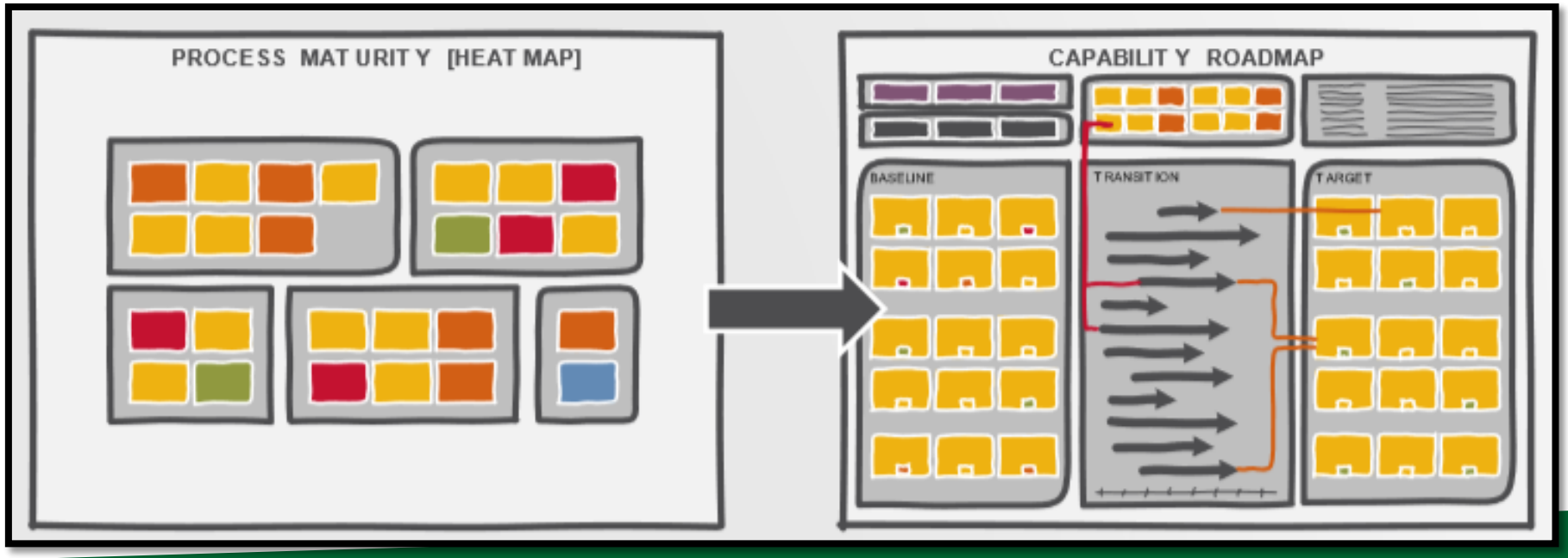


Architecture Roadmap Concept

Roadmap Creation

We must then also consider what the **target maturity of the Business Processes** should be, and

What **business initiatives should be linked to the Business Process maturity uplift**, and their associated timelines



Experiences of Other Universities

- Mindmap of Architecture Work of Other Universities

- Notable ones:
  - MIT
  - Bristol University