

## Enterprise Transformation and Change

# Concepts: Enterprise Transformation and Change

### Abstract

This document describes a model for Enterprise Transformation and Change for the systems within the Enterprise as a System of Systems.

This document describes the set of steps to translate an architecture description into an operational enterprise.

The [Enterprise Transformation and Change PDF](#) contains the Enterprise Transformation and Change Concepts. Version 0.5, 09-December-2022

Link to the [Enterprise Transformation and Change Model PDF](#).

### Author and Version

Bruce McNaughton, Version 0.5, 09-December-2022

### Contents

<b>Enterprise Transformation and Change</b> .....	<b>1</b>
<b>Introduction: Transformation and Change</b> .....	<b>3</b>
<b>Abstract System: Enabling System</b> .....	<b>11</b>
<b>Current State: The Mess</b> .....	<b>14</b>
<b>Target State: The Future</b> .....	<b>17</b>
<b>Gap Analysis: The Changes</b> .....	<b>19</b>
<b>Change: Roadmap, Minimum Viable Product (MVP) and States</b> .....	<b>20</b>
<b>Change: Change Portfolio and Investment</b> .....	<b>22</b>
<b>Change: Enabling Systems</b> .....	<b>24</b>
<b>References</b> .....	<b>25</b>
System Thinking Core .....	25
General System Theory, Ludwig von Bertalanffy .....	25
Fifth Discipline, Peter M. Senge .....	25
Re-Creating the Corporation, Russell Ackoff .....	25
Systems Thinking, Systems Practice, Peter Checkland .....	25
Thinking in Systems, Donella H. Meadows .....	26
On Dialogue, David Bohm .....	26
On Purposeful Systems, Russell L. Ackoff and Fred E. Emery .....	26
Principles of Systems Science, George E. Mobus, Michael C. Kalton .....	26
Essential Architecture and Principles of Systems Engineering, C. E. Dickerson, Siyuan Ji .....	26
Organizational Design Core .....	26
Organization Design, Jay Galbraith .....	26
Competing by Design, David A. Nadler and Michael L. Tushman .....	26
Requisite Organisation, Elliott Jaques .....	26
Management Core .....	26
Management: Tasks, Responsibilities and Practices, Peter Drucker .....	27
Built to Last, Jim Collins and Jerry I. Porras .....	27
Leadership Plain and Simple, Steve Radcliffe .....	27
Organizational Culture and Leadership, Edgar H. Schein .....	27
Leadership and the New Science, Margaret J. Wheatley .....	27
SCRUM: The Art of Doing Twice the Work in Half the Time, Jeff Sutherland .....	27
A New Psychology for Sustainability Leadership, Steve Schein .....	27
The Management Shift, Vlatka Hlupic .....	27
The Puritan Gift, Kenneth Hopper and William Hopper .....	28

---

Living Systems .....	28
The Systems View of Life, Fritjof Capra and Pier Luigi Luisi .....	28
The Hidden Connections, Fritjof Capra .....	28
The Turning Point, Fritjof Capra .....	28
The Embodied Mind, Francisco J. Varela, Evan Thompson, Eleanor Rosch .....	28

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### **Revision History**

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- V0.5 09-December-2022 Included the Enabling System Description and a capability set for change and transformation.
- V0.4 23-August-2022 add to Integrated Management System concepts.
- V0.3 27-January-2019 Update to transformation iteration model.
- V0.2 20-September-2017: Update based upon System and Enterprise Conceptual Models.
- V0.1 19-February-2017: Update from review.
- V0.0 12-February-2017: Initial Draft

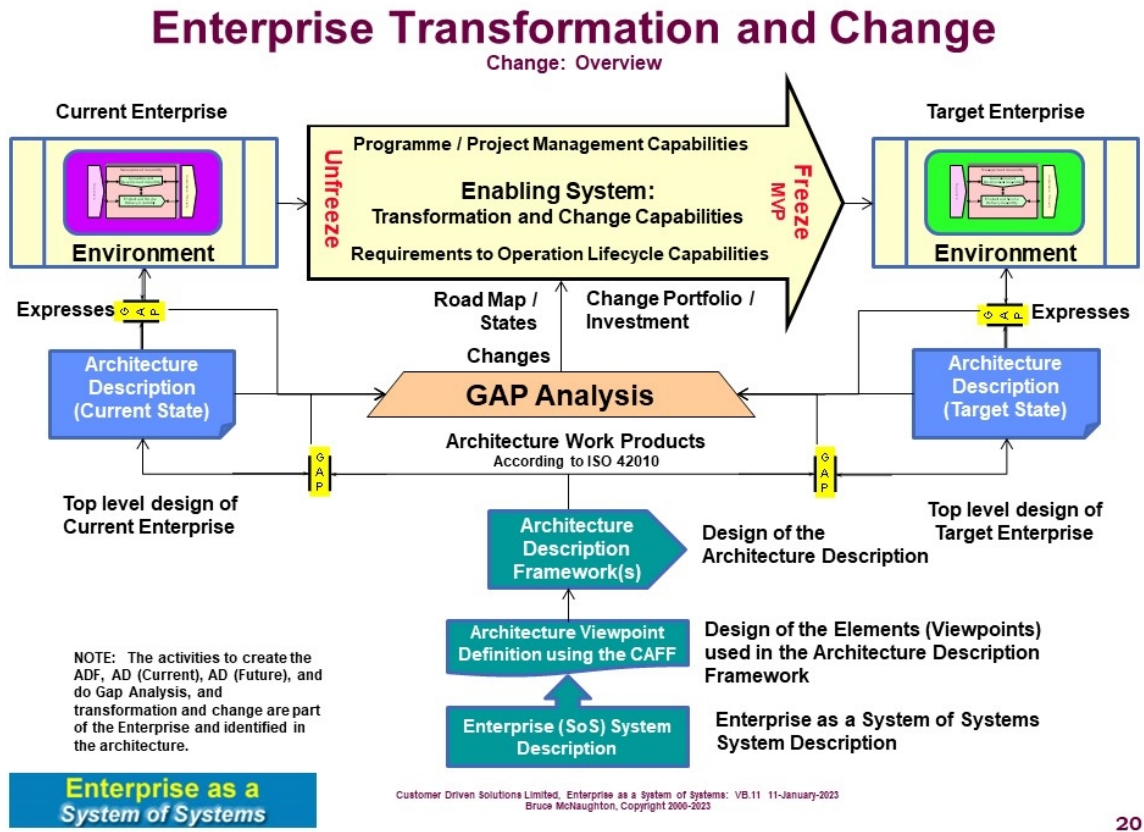
## Introduction: Transformation and Change

### Overview

Once the Enterprise is characterized as a system of systems, each of the systems will need to be realized, operated, enhanced and released.

The capabilities to transform and change an enterprise are actually the part of the enterprise that adapts and changes.

The picture below provides a model of the elements necessary for transformation and change.



20

This picture provides a model to introduce these concepts and principles. The following documents provide the contents of these sections:

Link to the [Enterprise Transformation and Change Model PDF](#) .

The [Enterprise Transformation and Change PDF](#) contains the Enterprise Transformation and Change Concepts. Version 0.5, 09-December-2022

This approach is very similar to the approach identified by Russell Ackoff in the Interactive Planning Process or Peter Checkland, in the Soft Systems Methodology (SSM). Both of these approaches take a holistic view of the enterprise and identify the changes to move the enterprise to a future state.

This approach also incorporates the approaches in ISO 42010 and ISO 15288. These will be highlighted in the various sections of this set of topics.

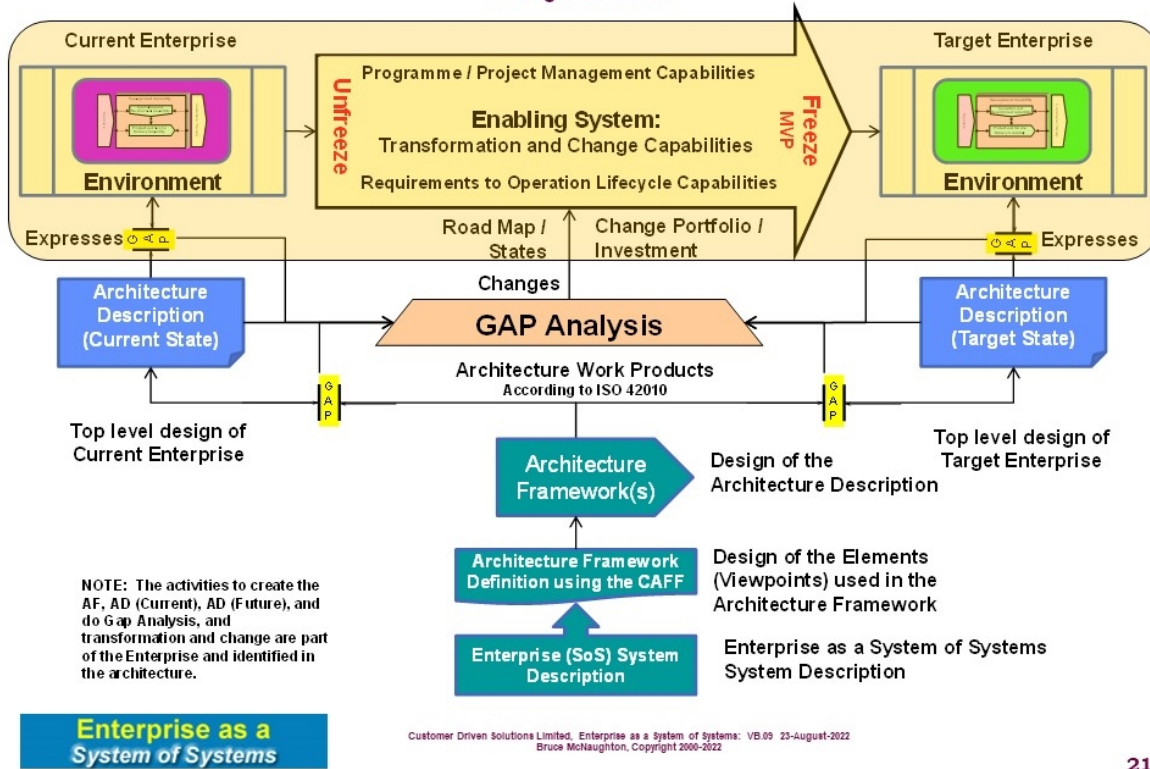
See the [Principles](#) of Transformation and Change

### Realized Systems and Architecture Descriptions

One of the principles of transformation and change is that all change comes from a realized part of the enterprise. The enterprise is created from one team and then grows through the creation of additional teams or relationships / contracts with other organizations. The picture below highlights the realized systems within the enterprise transformation and change model:

# Enterprise Transformation and Change

Change: Overview

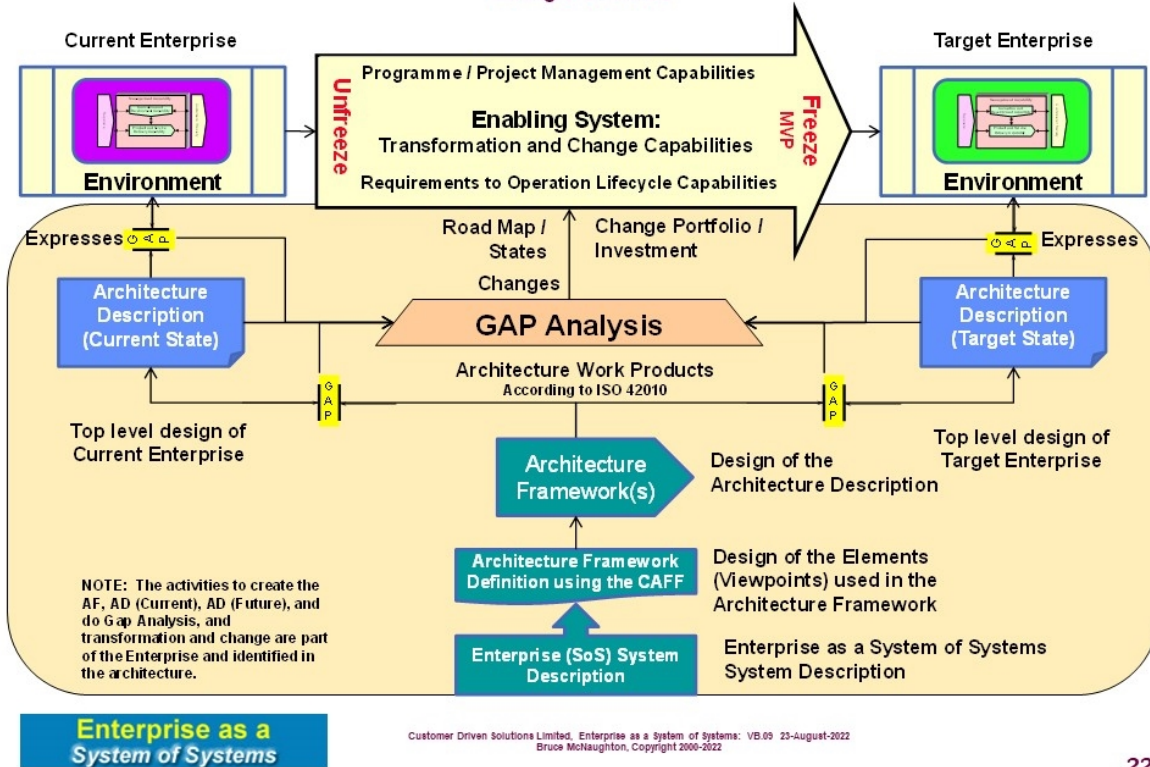


21

The realized systems represent the current state of the enterprise, the aspects of the enterprise that enable transformation and change and the target realized system that emerges as a result of the change. The following picture highlights the elements necessary to produce the architecture descriptions that describe each of the states of the enterprise.

# Enterprise Transformation and Change

Change: Overview



22

The key elements in this picture are:

- The concepts, principles and systems identified within the enterprise.
- The System Description (SDSF)s that are used to create the Architecture Description Frameworks used in an Enterprise.
- The Architecture Descriptions created using the Architecture Description Frameworks
- The Gap Analysis, Roadmaps, and Portfolios of change that drive the transformation and change.
- The enabling system (change system) that moves the enterprise from one state to another.

These represent the capabilities needed for enabling the transformation and change within the enterprise.

### Steps for Transformation and Change

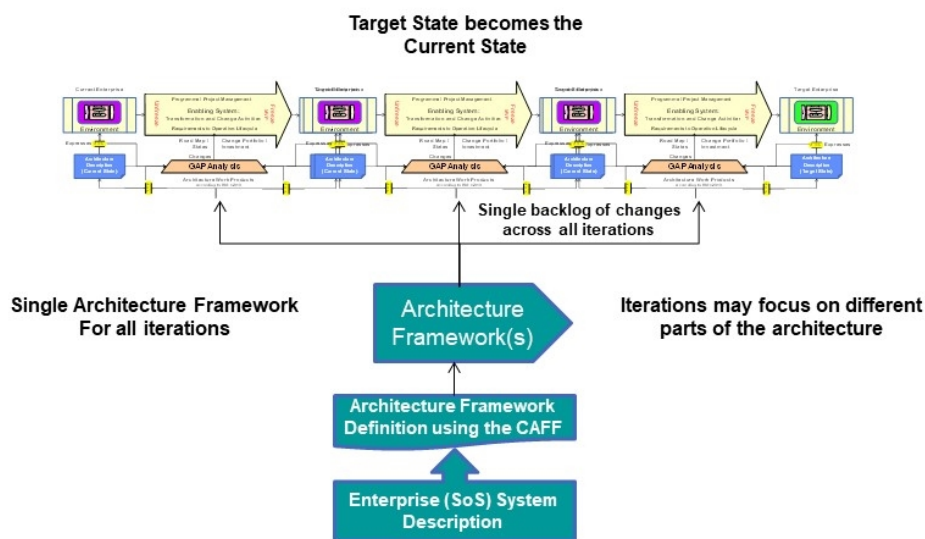
The steps that are defined for transformation and change using the model are:

- [Identify the current state: The Mess](#)
- [Identify the target state: The Future](#)
- [Carry out a Gap Analysis: The Changes](#)
- [Identify a Road map, minimum viable products \(MVP\), and architecture states](#)
- [Identify the Change Portfolio and Investments](#)
- [Establish the enabling systems to transform and change the enterprise.](#)

### Change Iterations

The steps for transformation and change can be used iteratively to manage the investment and risk of change. The following picture shows the way the elements can be organized to achieve incremental and iterative change.

## Change Iterations



**Enterprise as a System of Systems**

Customer Driven Solutions Limited, Enterprise as a System of Systems: VB.09 23-August-2022  
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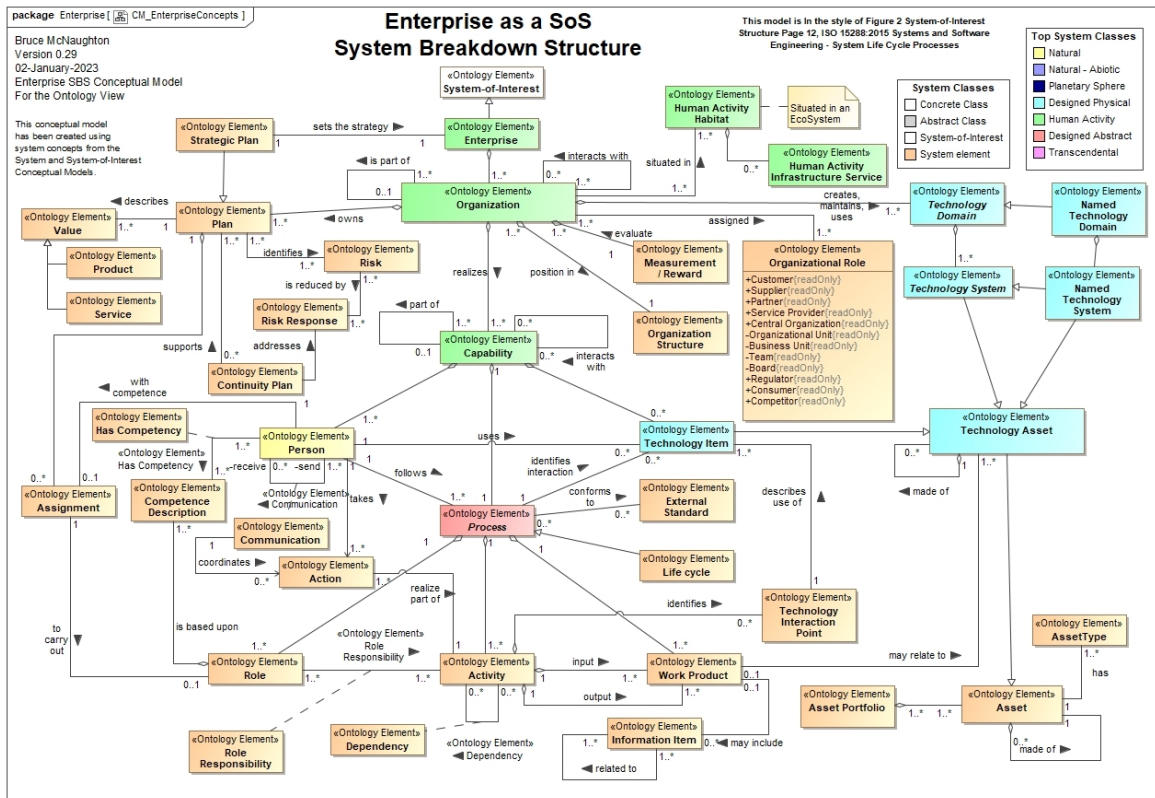
The key points in the picture are:

- For each iteration, the target state becomes the current state for the next iteration.
- A single Architecture Description Framework is used for each iteration
- A single backlog of changes can cover all iterations and provide a way to prioritize changes.
- Iterations may focus on specific parts of the architecture to stage the critical elements first.

### Enterprise Architecture

In order to make changes within the enterprise, the Systems within the Enterprise as a System of Systems must be understood. The following picture identifies the main systems within the enterprise..



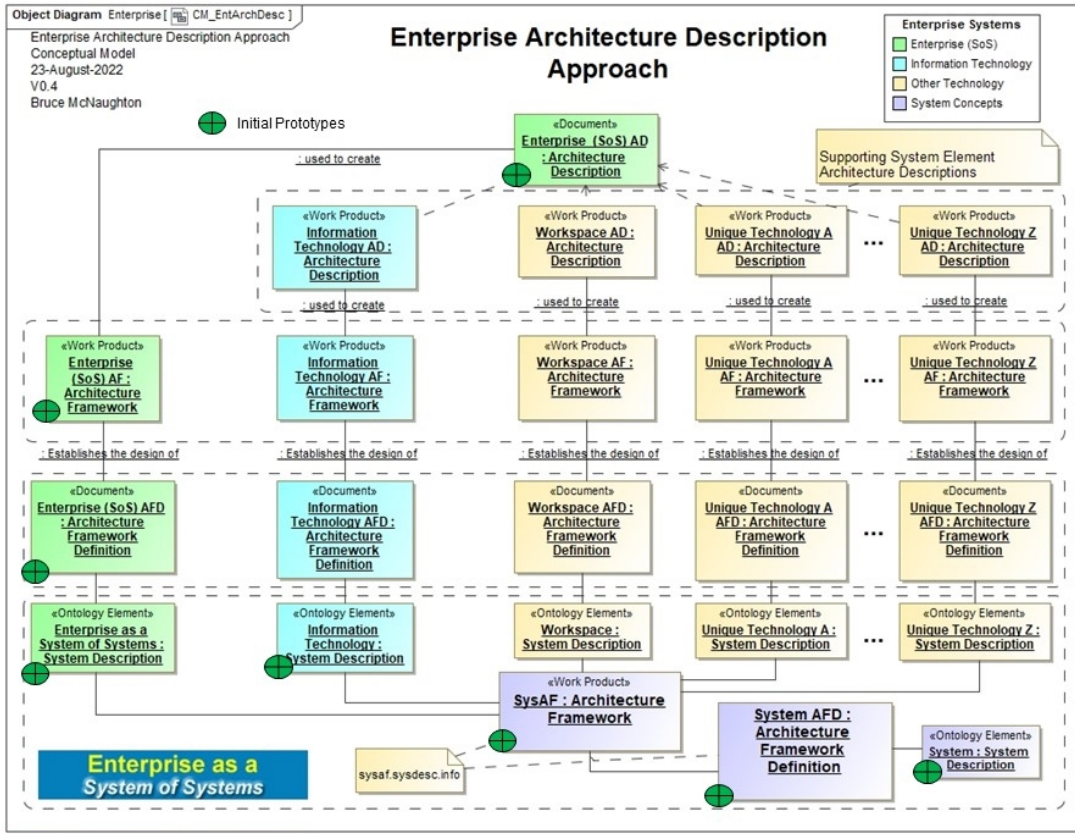


In the case of an Enterprise as a System of Systems (SoS), the architecture of the enterprise may be an integration of the various architectures of the major systems within the enterprise.. The following Architecture Description Framework will typically deliver the architecture descriptions for the enterprise:

- Enterprise (SoS) Architecture Description Framework
- Information Technology Systems Architecture Description Framework.
- Facilities / Work space Architecture Description Framework.
- Other Technology Architecture Description Frameworks, for Example:
  - Aircraft ADF (for an Airline)
  - Food Processing ADF
  - Automobile ADF
  - Computer ADF
  - ETC

The Enterprise Architecture Description consists of a set of Architecture Descriptions that are managed by stakeholders with concerns and interests in the system area:

- Enterprise AD (organizations and capabilities)
- Enterprise IT AD (network of information systems)
- Enterprise Workspace AD (work spaces needed for the enterprise)
- "Technology A" AD
- ...
- "Technology Z" AD.

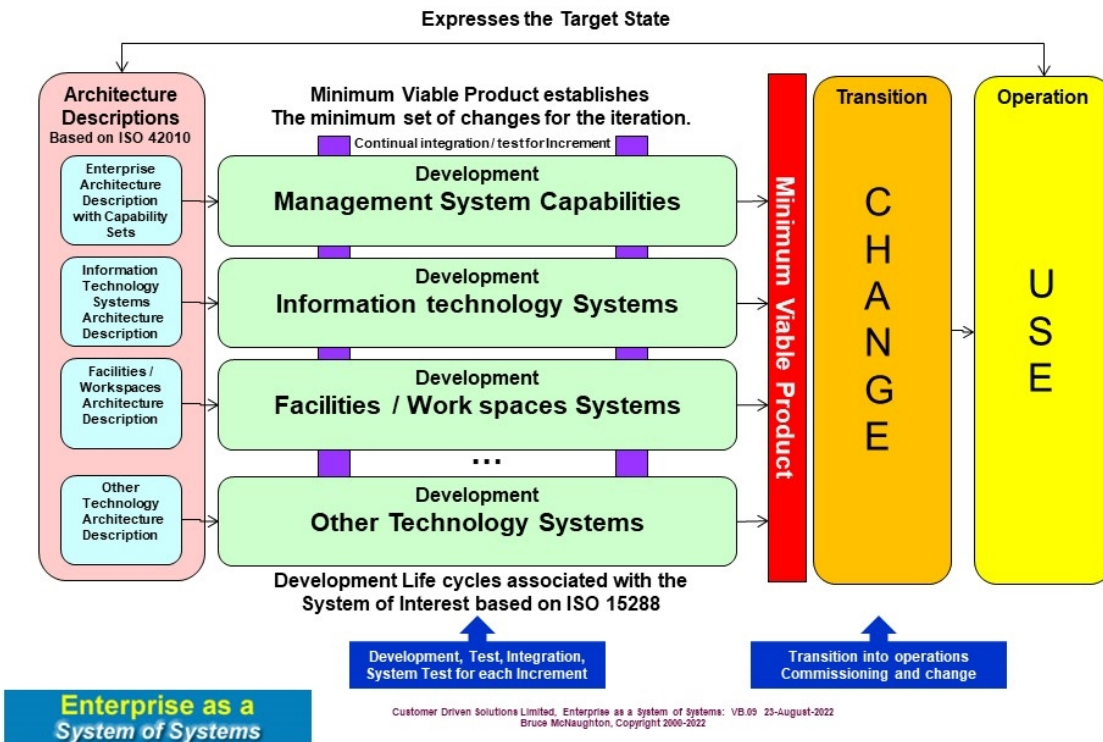


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**Iteration Patterns**

Each iteration follows the same pattern (see the picture below).

**Iteration Pattern**



**Enterprise as a System of Systems**

Customer Driven Solutions Limited, Enterprise as a System of Systems: VB.09 23-August-2022  
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30

Each iteration provides the means to translate an architecture description into a realized operational Enterprise as a System of Systems (SoS).

There may be multiple Architecture Description Frameworks involved with this transformation. The key Architecture Description Frameworks are:

- Enterprise (SoS) Architecture Description Framework
- Information Technology System Architecture Description Framework.
- Facilities and Workspaces Architecture Description Framework.
- Other Enterprise Specific Technology Architecture Description Frameworks. (e.g. Aircraft, Food Processing, Health Care, etc)

### Enterprise Maturity

The concept of enterprise maturity is also a combination of maturity types within the enterprise. The following picture highlights 3 maturity models:



The elements represented by these maturity models can be at varying states across the enterprise. Movement to roughly the same level prevents other emergent interactions from occurring. There are other approaches that also address maturity:

- EFQM
- Baldrige Award
- Various Management / Leadership Maturity Models.

Maturity Models also relate to the readiness for change within an enterprise. Higher maturity enterprises embrace change. Lower maturity enterprises must be aware of the change equation in all attempts to improve maturity:



## The Change Equation

$$\text{Change} = V \times D \times N > C$$

**V** = Vision of the end state

**D** = Dissatisfaction with current state

**N** = Practical Next Steps

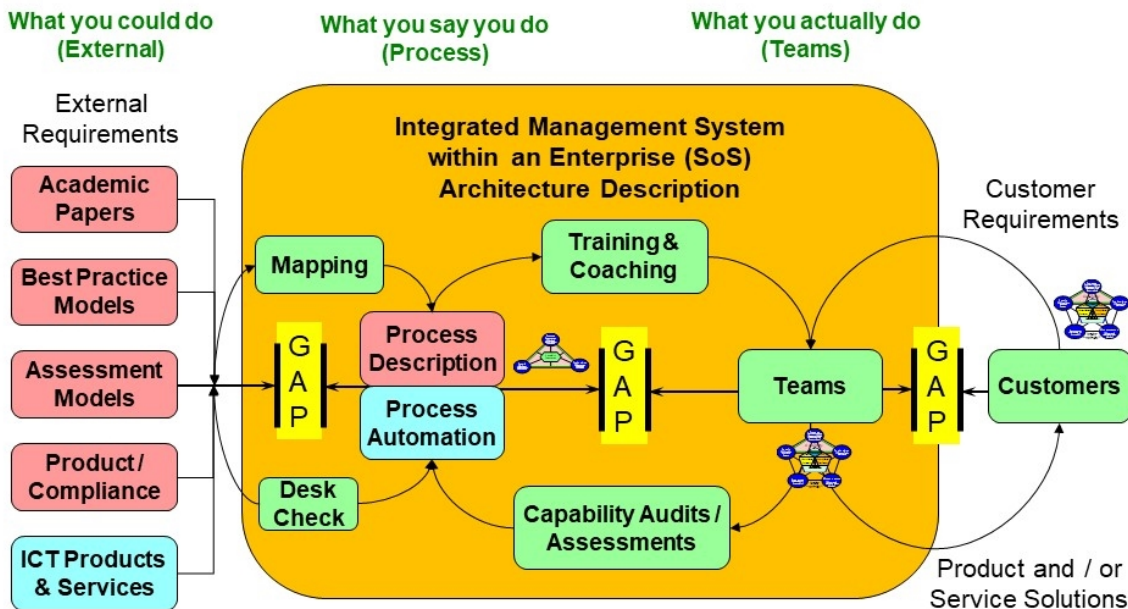
**C** = Cost (Psychological and Financial)

*All change comes from the inside!*

### Realization and Operational Change

The operational change relates to capabilities already included within the enterprise to provide a continual improvement capability. The ability to handle various operational gaps is shown in the following picture:

## Realization Gaps



These changes do not require changes to the architecture description but have a direct impact on the performance of the organization. For example:

- Increasing the capacity of a team based upon increased volume of work.
- Identifying and elimination of defects within an operational process (Lean Six Sigma)
- Improving processes
- Improving training and development for specific classes of employees.

All of these changes are driven from the following practices within the current state:

- Operational Audits and assessments
- Cultural audits and assessments
- External benchmarking (some may be operational changes).
- Performance reviews
- Customer complaints and feedback
- Customer satisfaction and NPS measurements.
- etc.

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### **Transformation and Change Capabilities**

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The capabilities necessary for transformation and change are identified in the Enterprise (SoS) Architecture Description Framework. These include:

- [Enterprise Architecture](#)
- [Programme and Project Management.](#)
- [Various Change Life Cycles](#)
- Procurement.
- Planning and Review

## Abstract System: Enabling System

### View: System Name and Class

**Name:** Enabling System

**Class:** [Organization](#)

**Abstract System:** This system has been identified as an abstract system that cannot be implemented directly. The abstract system establishes a shared pattern of characteristics that any system can use to describe its unique characteristics when referenced in the 'based on' list above. These references are described using a generalization association in UML.

The Enabling System is defined as:

ISO 15288:2015: **enabling system:** system that supports a system-of-interest during its life cycle stages but does not necessarily contribute directly to its function during operation.

The enabling system is also called:

- Change and Transformation Programme or Project
- New Product / Service Development Programme or Project.
- Change Initiative

The enabling system is realized as an organization through the realization of a set of capabilities. See [System Element: Capabilities](#).

### View: System Purpose

The stated or implied purposes of the system-of-interest

The purpose of an enabling system is to help progress a system-of-interest through its development life cycle or provide support during operation. This type of system provides support to operational capabilities and systems.

Examples of Enabling Systems are:

- New Product / Service Development Programmes and Projects
- Business Transformation Programmes and Projects
- IT or other related Technology Development programmes and projects

In addition, there may be some operational systems that take on a role of an enabling system. For example, the following are supporting systems to operational capabilities:

- Product Production Systems.
- Product Transportation and distribution systems

### View: System Properties

#### **Systemic Measurable Variables**

- Cost of the enabling system.
- Schedule (milestones for key phases / stages and dependencies)
- Time to market (for new product development)
- Number of faults and corrective actions.
- Resources (people and other assets) planned and used.

#### **Systemic Capabilities or Functions**

The enabling system provides planning, specification, architecture and design, implementation, integration and release. Other types of enabling systems provide support through the creation or delivery of elements that are part of the system of interest.

These capabilities are delivered through a set of capabilities realized through an organization. See [System Element: Capabilities](#).

#### **System States**

The various defined states that the system-of-interest can be in.

- **Architectural states** (Current State, Intermediate State(s), Target State)
- **Transformational States** (planned, delivering, stage gate complete, complete)
- **Operational States** (Started, operating, closed)

### View: System Stakeholders and Concerns

Identify the key stakeholders and their concerns for this system. Each stakeholder is identified and their concerns and interests are identified. The list below is an example. Each system will have a specific set of stakeholders and concerns.

- **Owner / manager:** Does the business case justify the investment in the system-of-interest?
- **System Architect:** Are the system concepts understood? Are the system properties sufficient to deliver the objectives? Are the states defined and more detailed life cycles understood?
- **People in the environment** Will the people in the system-of-interest recognise the value of the enabling system?
- **Change Agents** Are the program or project teams fully aware of the purpose / objectives / contribution of this enabling system?
- **People who are part of the system** Are the people in the enabling system fully aware of their impact on the system-of-interest they are supporting?

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### View: System Environment (Context)

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The environment and the potential impacts on the system-of-interest.

this section includes

- Transactional
- External
- Regulator

The Environment for the enabling system includes the 'system-of-interest', other supplier systems, and management systems.

Typically these enabling systems will be organizations or enterprises in their own right. This means they will consist of management systems and technology systems unique to the systems-of-interest they are supporting. See the Organization as a system for further information about the structure of an organization and the capabilities that are typically included.

[PDF: System Description: Organization as a SoS, Version 0.13 05-December-2022](#)

[PDF: System Description: Capability as a System, Version 0.16 05-December-2022](#)

Project or program style enabling systems tend to use the following capabilities along with innovation and change life cycle processes.

Primarily:

- Program Management.
- Project Management.
- Procurement
- Team Performance Management.
- People Development
- Asset Management
- Organization Design (typically called Enterprise Architecture)

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### View: System Behavior (Structural Changes)

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The primary interactions of the enabling system and the system-of-interest are through the changes to the system elements of the System-of-interest.

#### **Configuration / Scenario:**

Describes any configuration / scenario attributes for a specific system-of-interest. This may not be appropriate for all system descriptions (e.g. patterns or abstract systems).

#### **Cyclical (Repeating / Regular) Processes**

The enabling systems must match the needs of the system elements of the system-of-interest. These system elements may have their own unique life cycles that are managed within the enabling system.

Typical cyclical processes are:

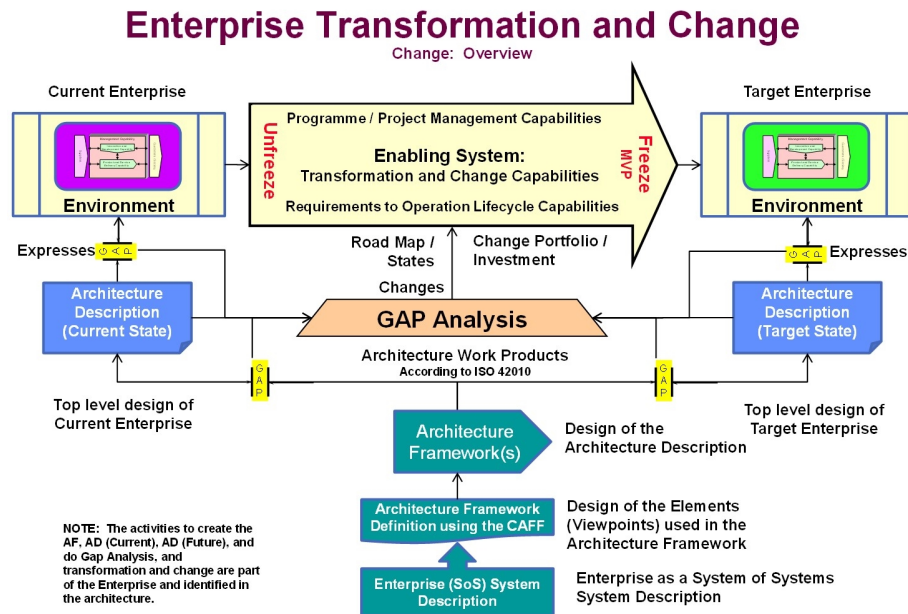
- Management Processes (planning, monitoring, reporting, etc).
- Technical Processes (Formal Technical reviews, Testing, Change control, etc.)

#### **Development Life Cycle Processes**



The enabling systems are created, used and released as part of the overall change or transformation of an [Organization](#) or [Enterprise \(SoS\)](#) or [Technology System](#).

The typical steps for transformation and change are shown in the following diagram:



The steps associated with the model are:

- [Understand the Current State \(The Mess\)](#)
- [Identify the Future State \(The Ideal\)](#)
- [Identify the Gaps between the Current State and the Future State.](#)
- [Identify the Roadmap for Delivery](#)
- [Develop a change Portfolio](#)
- [Deliver the change](#)

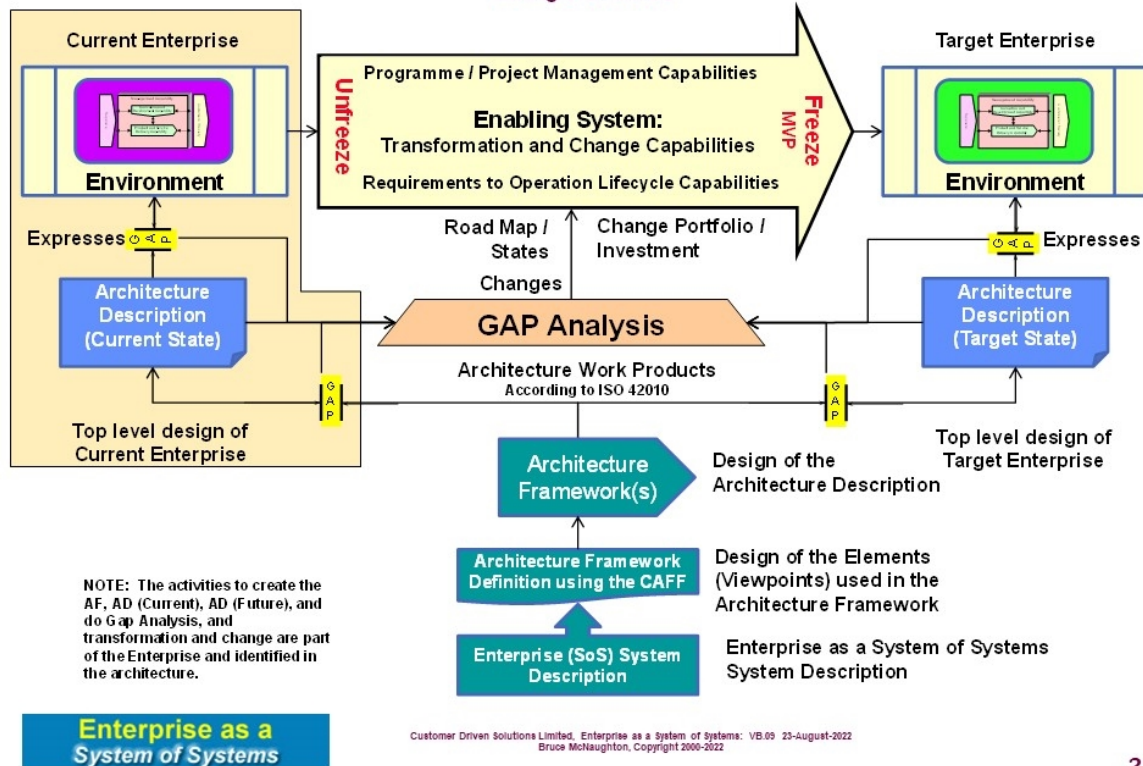
## Current State: The Mess

### Overview

Understanding the current state of the enterprise is critical to transformation and change of the enterprise.

## Enterprise Transformation and Change

Change: Overview



23

There are many approaches to describing the way the current organization works, or assessment of the current state. If these approaches have been carried out, the current state should be visible and in some cases understood.

Though modeling of the current state has some value, the main aspects of the assessment should be looking at what's working and what's not working and whether continued use of this will achieve the enterprise objectives. The architecture description may be good and the implementation of the architecture description may be poor. Once the key areas of the current state are understood along with the costs of continuing as realized, the need for change will be visible. This step identifies the need and some of the operational changes that are required. Eventually if the architectural approach to transformation and change is used, the target architecture description will become the current architecture description and reflect the expected position for the enterprise.

### Assessments of the Current Architectural Work Products

In some organizations, architecture descriptions that describe how the current realized enterprise are available. These should be used to help assess Gap 2 below.

Audits or assessments of the architectural approach, (eg using ISO 42010 or other assessment approaches such as ISO 9001 or the CMMI). These will examine the practices that shape the structure of the enterprise.

### Gap 01: The Architecture Description Framework and the Architecture Description

Gaps are identified between the Architecture Description Framework and the Architecture Description. These may be due to the following.

- An architecture description was not produced and does not provide any reference point for the current state assessment.
- Due to the time and budget available, some of the areas of the Architecture Description Framework were not implemented. This supports an incremental approach to transforming and changing the enterprise.
- A view of the architecture description may not have been created correctly using the associated viewpoint. This may lead to incorrect implementation and a resulting problem within the realized enterprise. This may be due to a problem with the Architecture Description Framework or with the way the view

instructions were carried out. Corrective action will be required in both cases.

- Include a decision tree for the various possibilities related to this gap.

Each step in the transformation process will be testing the views in the architecture description. The results of this usage ensures traceability and correct understanding of the architecture views.

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### Assessments of the Current State of the Enterprise

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There are many assessment capabilities that assess the current state of an enterprise:

- ISO 9001, the CMMI, the EFQM assessments, the Baldrige assessment. These can be used for all of or part of an enterprise and provide a good understanding of the current practices and how well they have been implemented.

People focused assessments of the enterprise.

- The PeopleCMM, Investors in People, and some Cultural Assessments

All of the above provide feedback and input to a current state assessment of the enterprise.

The following activities would also be considered:

- Identify and consolidate the current state problems and issues that need to be addressed.
- Identify the 'no change' position ... projected into the future
- Identify the costs and performance implications of these problems (in business terms).

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### Gap 02: The Architecture Description and the Realized Current Organization

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As the enterprise develops, an architecture description may or may not exist for the enterprise.

If the current state architecture description does not exist, any work to assess the current state should be added back into the architecture description. This ensures that the current state architecture description is established with current information from the assessments.

The types of gaps that arise from Gap 02 are:

- Cultural issues
- People in positions with the incorrect level of skills, knowledge, experience, attitudes, behavior and beliefs.
- Capabilities not performing as expected
- Teams not performing as expected.
- Incomplete implementation of the architecture description.
- Mis-interpretation of the architecture description through to realization.
- Missing capabilities
- Organizational Structure improvements.
- Plan (schedule or capacity or funding) revisions.
- Enabling System: Capabilities necessary for the enabling system (project management or life cycles)
- Enabling System: Capabilities for business change and deployment of solutions.
- Enabling System: Current state change capabilities.

The mix of problems identified through Gap 02 require a number of different approaches to addressing the problems. Not all of the options available are architectural solutions.

All of these problems require support through the appropriate life cycles to improve the implementation in the current organization.

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### Current State Change Capabilities

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Some of the gaps identified above may be closed using current state change capabilities. These can generally handle the following types of changes:

- Increase the size of the team.
- Increase the capacity of critical skills, knowledge or experience
- Change the individuals in positions that need a different set of skills, knowledge, experience attitudes and behaviours.

These changes can be carried out using:

- Standard management practices
- Lean Six Sigma
- Process improvement capabilities
- Information system implementation and support

These changes will be tracked to completion through normal reporting channels.

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### Summary and Recommended Actions.

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To close this step, a summary and recommended actions document is created to capture the findings of the current state within the enterprise.

In addition, a simple architecture description may be created or if one exists, updated to reflect the current realization relative to the current architecture description.

Types of conclusions:

- Architecture Descriptions is needed
- Architecture Description is fine and the realization is poor
- Architecture Description needs to be updated and the enterprise is to be transformed.

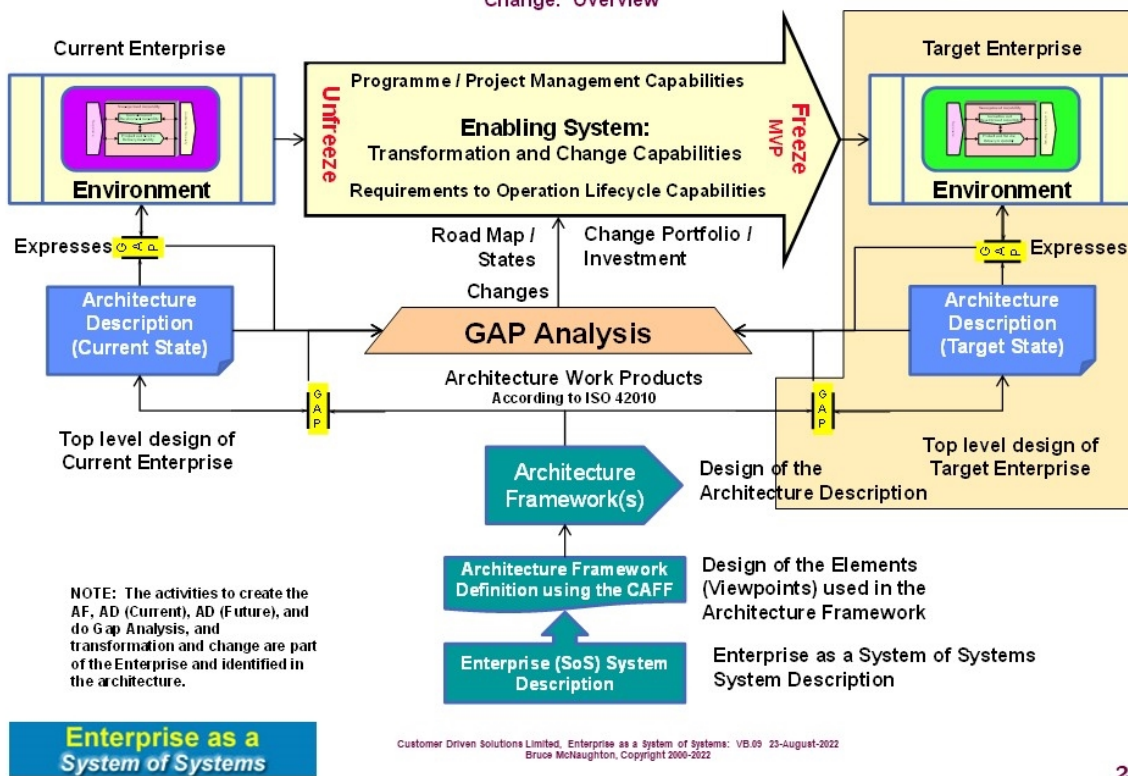


## Target State: The Future

### Overview

# Enterprise Transformation and Change

Change: Overview



24

### The Target (the What)

This is first informed by the enterprise purpose, vision, values, objectives and strategies. These are:

- Established if not available
- Reviewed and revised if necessary.
- Aligned to an environmental assessment (along with any assumptions)

### The Target (the How)

The target options are discussed and identified:

- Idealized architecture state (the ultimate to achieve the purpose). (assuming that could start all over again - unconstrained)
- A stretch architecture state (a reduced state constrained to reality: time, cost)
- A realistic and achievable state (an achievable state constrained to reality, time and cost)

### The Target Architecture Description

The target architecture description is prepared based upon the selected target. The appropriate Architecture Description Framework describes the process to be used to create the architecture description. Each viewpoint describes the process to create a view with the associated models. This architecture description may also be referred to as an [Operating Model](#)

### Gap 03: Architecture Description Framework to Architecture Description

There may be gaps that arise from applying the constraints to the Target Architecture Description. These Gaps are intentional and provide for a realistic and achievable realized enterprise. In addition, selected views may not be included as a priority in this iteration. There may also be a series of incremental steps to move towards the final state. The target state may include an incremental state rather than the final state.

### Gap 04: Architecture Description to the Realized Target Enterprise

The gaps that arise in this space are the gaps between the Target Architecture and the ability of the enterprise to realize this architecture.

This may be identified in the following areas:

- Skill levels and maturity of the enterprise to achieve the end state
- Technology may not be achievable (too big a jump)
- Customers won't perceive any value in the investment.
- Investment required to achieve the step change may not be available.

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### **Summary and Recommendations**

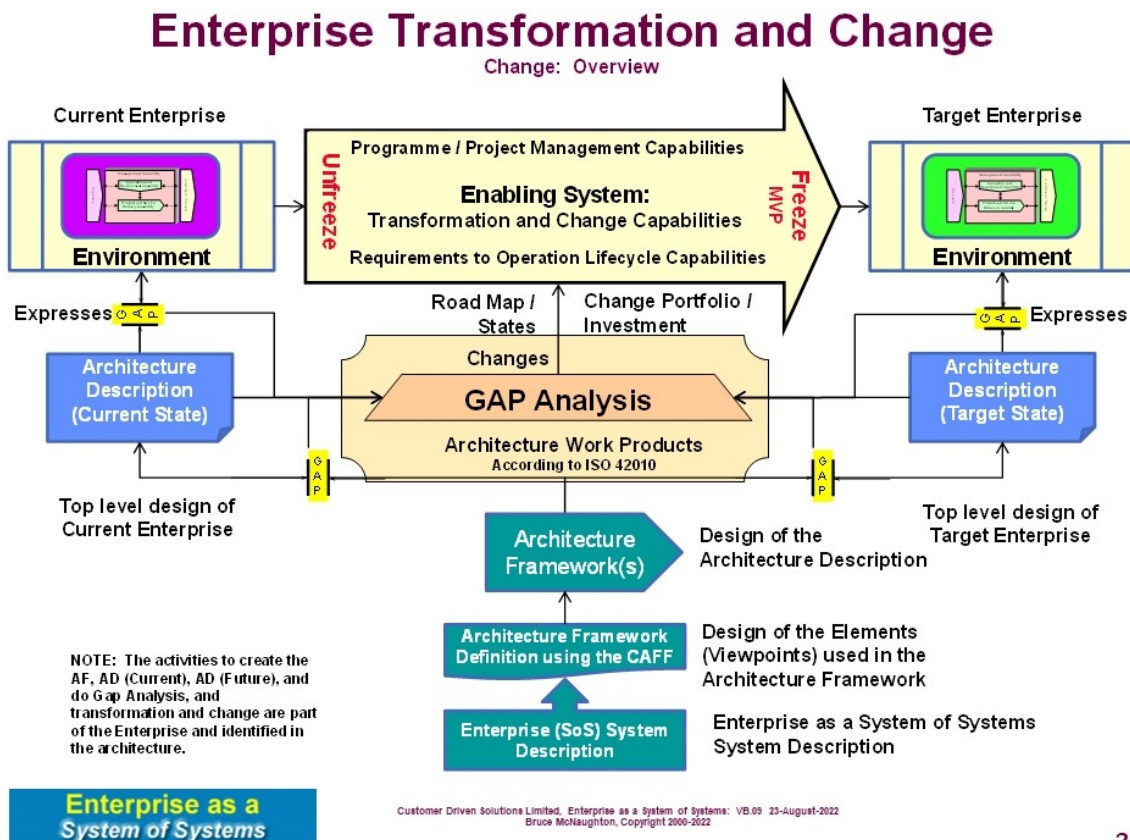
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A summary of this step is prepared along with a Target Architecture Description

This is reviewed and revised based upon feedback.

## Gap Analysis: The Changes

### Overview



25

### Gap Analysis

Identify and understand all of the gaps in the following areas:

Gaps: 01, 02, 03, 04

Gaps between the current state architecture description and the target state architecture description.

Capture the gaps in a structured format for further analysis.

Identify the impacts and prioritize the areas that will be blocking the ability to achieve objectives.

and the resulting changes needed to close the gaps

Eliminate duplicates in the list of gaps.

### Identify Changes

Identify all of the changes necessary based upon the prioritized list of gaps.

These changes must be well formed but at a high enough level to be able to understand the costs and benefits of carrying out the change.

and understand the dependencies of the changes according to the target architecture description.

Associate the changes with the systems identified in the Enterprise as a System of Systems (SoS)

### Prioritize Changes

Prioritize the resulting list of changes to ensure that the highest value is delivered early and often.

### Summary and Recommendations

Package the full set of changes into a product backlog or prioritized requirements list.

Generate a product breakdown structure (PBS) to create a visual view of the changes that are needed.

Review and approve these changes.

## Change: Roadmap, Minimum Viable Product (MVP) and States

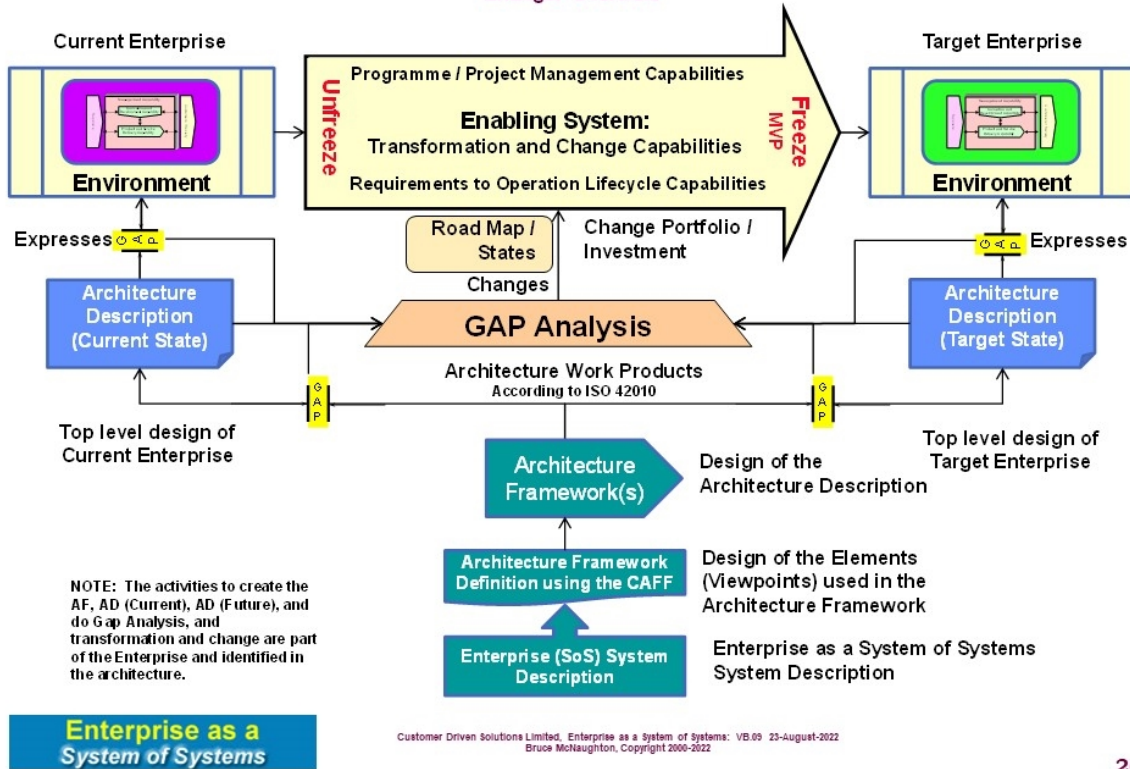
### Overview

the pfd of capability based planning .. e.g. the sequence and order that the changes must be made (if there is an order).

identifying the viable architectural states along the way to the target.

## Enterprise Transformation and Change

Change: Overview



26

### Sequence and Dependencies

Identify the sequence and dependencies across the prioritized list of changes.

This is basically a PFD for the set of changes. (note these are hard dependencies .. not resource dependencies).

### MVPs

Identify groupings of changes that form a Minimum Viable Product at a point in time.

The MVP may stage the implementation of a product over a number of increments. So a product may be broken down into a chunk of work typically delivered in 3 months.

(picture of an item in an mvp moving from 10% complete to 50% to 70% and then to 100% across 4 increments).

### Size the MVP

Size each of the items in the MVP for the state.

Consider the definition of the MVP and the contents.

This may cause a re-definition of the MVPs. (an iterative process).

### Increments over Time

Identify points where value is delivered that leads to the target set of changes.

This step associates an MVP to an architecture state. This provides a clear definition of the changes that must be allocated to programmes and projects.

These increments provide a time frame for the realization of the changes.

Focus of increments and iterative development is to fail fast and learn.

Increments may correspond to an architectural state.

typically 3 months between increments.

### Identify the Architectural States



Architectural states provide a definition of the enterprise that has been realized and value is starting to be delivered.

All architectural states are 'intermediate' except for the last architectural state = Target Architectural state.

Also known as Transitions (MSP and ITIL) or deployments.

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### **Summary and Recommendations**

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Provide a document containing the definitions of the MVP and increments.

Provide a visual representation of the roadmap (a model for the change view).

## Change: Change Portfolio and Investment

### Overview

Shaping the investment portfolio to achieve the target state.

resources

timing

dependencies

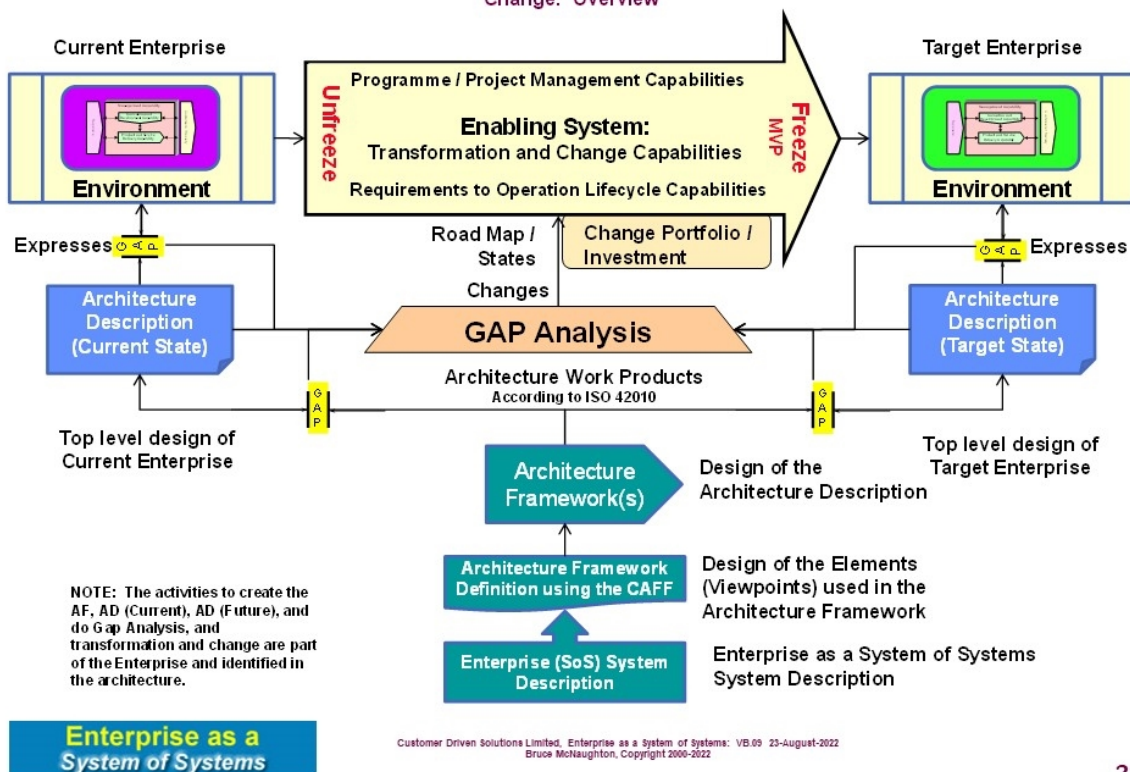
allocated to programmes or projects

governance

initiate programmes or projects from the governance..

## Enterprise Transformation and Change

Change: Overview



27

### Identify the structure of the portfolio

Programmes and projects generally fall into two types:

- Customer or delivery focused
- Capability development or improvement.

This design is based upon the types and number of changes coming from the roadmap and architectural states work.

### Scope for Each of the Programmes / Projects

Allocate the changes / products to a programme / project. This will set the scope for the programme / project and the types of capabilities they need to deliver these changes.

### The Portfolio

The portfolio of programmes and projects can then be sized to allow constraints to be applied.

As each of the programmes and projects are defined, these will be prioritized and then started as necessary.

### Summary and Recommendations

The Portfolio of programmes and projects is described in a set of documents (very similar to a top level programme).

- Vision
- Roadmap and Plan

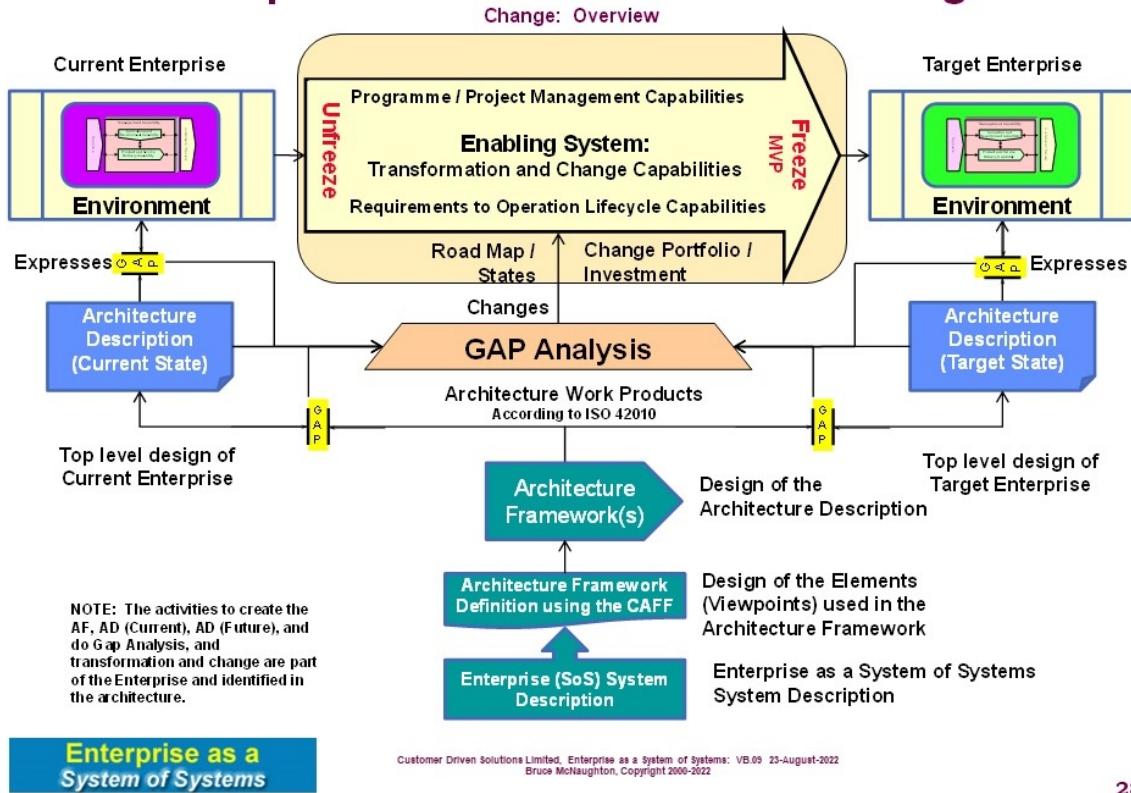
- Portfolio of Programmes and Projects
- Portfolio Business Case
- Enterprise Architecture (e.g. architecture descriptions)
- Dependencies, Risks and Assumptions

## Change: Enabling Systems

### Overview

The enabling systems are the part of the enterprise that delivers the transformation and change.

## Enterprise Transformation and Change



28

### Programmes and Projects

Standard Processes are used for programme management and project management

### Life Cycle

The programmes and projects use appropriate life cycles related to the system that is being changed. Many of the life cycles will be patterned after ISO 15288.. etc.

### Governance

Each programme / project will have appropriate governance that will be monitored by the top level programme (portfolio).

Any changes to the programme will be assessed at the portfolio level for overall impact to achieving the overall goals.

## References

### System Thinking Core

Please see the following Links for the System Description: *System (Abstract)*.

- [PDF: System Description: System \(Abstract\), Version 0.30, 27-December-2023 \(working draft\)](#)
- [Link to the System Description Architecture Description Framework](#)
- [Link to the System \(Abstract\) Architecture Viewpoint Definition](#)
- [PDF: Structuring Formalism: System Description \(SDSF\), Version 0.4, 07-February-2023](#)
- Website: [sysdesc.info](http://sysdesc.info): [System](#)

The System Description includes the following sections representing views of the system-of-interest:

- System Name and Class
- System Purpose
- System Properties
- System Stakeholders and their concerns
- System Environment (Context)
- System Structure (Pattern of Organization)
- System Behavior (Structural Changes)
- Correspondences
- Decisions and Rationale
- References

The following links help create a System Description

- [Link to the System Description Template](#)
- [Link to the System Description Validation Template](#)

The following are links to the COMPASS Project and the CAFF:

- [Link to D21.5b Compass Architectural Framework Framework \(Local\)](#): CAFF Viewpoint Definitions

### General System Theory, Ludwig von Bertalanffy

#### [General System theory](#)

Fundamental thinking about a system pattern that applies across many disciplines. Chapter 3 Some System Concepts in Elementary Mathematical Consideration: Pages 54 - 56: provides some key concepts.

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### Fifth Discipline, Peter M. Senge

#### [The Fifth Discipline: The art and practice of the learning organization: Second edition](#)

The Five Disciplines described in the book are important to seeing systems and understanding the interaction of the parts.

The Five Disciplines are similar to the [System of Profound Knowledge](#) described by Deming.

Key elements of this book:

- An understanding of mental models and the impact they can have on decisions
- An understanding of the importance of personal visions both for individual motivation and later for building a shared vision.
- An understanding of the dynamics of systems thinking both in time and place.
- An understanding of the importance of practice in a safe environment.

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### Re-Creating the Corporation, Russell Ackoff

#### [Re-Creating the Corporation: A Design of Organizations for the 21st Century](#)

[Definition of a System and 5 Conditions](#); Multi-Dimensional Organization Design; Interactive Planning; and more.

#### [System of System Concepts](#)

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### Systems Thinking, Systems Practice, Peter Checkland

#### [Systems Thinking, Systems Practice: Includes a 30 Year Retrospective](#)



This book contains a good description of [Human Activity Systems \(HAS\)](#) based on a [root definition to describe a human activity system](#) (CATWOE). These are both used in the [Soft Systems Methodology \(SSM\)](#).

The concept of the Root Definition has been extended to the System Description that is produced using the System Description Architecture Description Framework. The [Human Activity System](#) has also been extended from [living social systems](#).

The book also contains a simple system classification scheme that is being used to define a Earth (Gaia) as a System of Systems model. The system classification system is described in the book from page 102 to page 122. Figure 4, page 112 highlights the 5 [system classes](#). This book also has a good glossary of terms.

This system classification scheme is also being used as [the System Classification Framework](#) for the System Description Architecture Description Framework. This framework captures the identified systems and their type.

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### **Thinking in Systems, Donella H. Meadows**

[Thinking in Systems: A Primer](#)

[Donnella Meadows Project](#)

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### **On Dialogue, David Bohm**

[On Dialogue](#)

A very useful book about conversations that become collective thinking.

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### **On Purposeful Systems, Russell L. Ackoff and Fred E. Emery**

[On Purposeful Systems: An Interdisciplinary Analysis of Individual and Social Behavior as a System of Purposeful Events](#)

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### **Principles of Systems Science, George E. Mobus, Michael C. Kalton**

[Principles of Systems Science](#)

Excellent visuals, principles and concepts about systems and system science.

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### **Essential Architecture and Principles of Systems Engineering, C. E. Dickerson, Siyuan Ji**

[Essential Architecture and Principles of Systems Engineering](#)

Explores the mathematical basis of architecture and MBSE

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### **Organizational Design Core**

#### **Organization Design, Jay Galbraith**

[Organization Design](#)

This book contains the original STAR Model which included Technology.

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### **Competing by Design, David A. Nadler and Michael L. Tushman**

[Competing by Design](#)

[Congruence Model](#)

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### **Requisite Organisation, Elliott Jaques**

[Requisite Organization](#)

Good book about management practice and systems thinking.

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### **Management Core**

Please see the following Links for the System Description: Enterprise (SoS).

- [PDF: System Description: Enterprise as a System of Systems \(SoS\), Version 0.17, 24-June-2023](#)
- [PDF: System Description: Organization as a SoS, Version 0.13 05-December-2022](#)
- [PDF: System Description: Capability as a System, Version 0.16 05-December-2022](#)
- [PDF: System Description: Process \(Human Activity\), Version 0.4, 22-August-2022](#)
- Link to [the Enterprise \(SoS\) Architecture Description Framework](#)
- Link to [the Enterprise \(SoS\) Architecture Viewpoint Definition](#)
- See System: [Integrated Management System](#)
- [PDF: System Description: Integrated Management System, Version 0.17, 10-October-2023](#)
- Website: [EaaSOS.info](#)

### **Management: Tasks, Responsibilities and Practices, Peter Drucker**

#### [Management: Tasks, Responsibilities, Practices \(Drucker series\)](#)

This book introduces the activities of a manager: Planning, Organizing, Resourcing, Integrating, Measuring and Developing People.

Peter Drucker has written many books on management. This is an abridged version (about 200 pages shorter than most) and includes a glossary. I find this book very readable.

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### **Built to Last, Jim Collins and Jerry I. Porras**

#### [Built To Last: Successful Habits of Visionary Companies](#)

Introduces the concept of Core Ideology

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### **Leadership Plain and Simple, Steve Radcliffe**

#### [Leadership: Plain and Simple \(Financial Times Series\)](#)

Introduces: Future, Engage, Deliver model for Leadership.

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### **Organizational Culture and Leadership, Edgar H. Schein**

#### [Organizational Culture and Leadership \(The Jossey-Bass Business & Management Series\)](#)

A good model of culture that supports the social system model. This includes macro and micro cultures.

Edition 5 also includes the [cultural dimensions theory](#) from [Geert Hofstede](#)

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### **Leadership and the New Science, Margaret J. Wheatley**

#### [Leadership and the New Science](#)

(A useful book for Managers)

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### **SCRUM: The Art of Doing Twice the Work in Half the Time, Jeff Sutherland**

#### [SCRUM: The Art of Doing Twice the Work in Half the Time](#)

A book about agile working from a non-IT perspective.

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### **A New Psychology for Sustainability Leadership, Steve Schein**

#### [A New Psychology for Sustainability Leadership](#)

The hidden power of ecological worldviews

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### **The Management Shift, Vlatka Hlupic**

#### [The Management Shift](#)

Includes: Emergent Leadership Model and 6 Box Leadership Model.

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## **The Puritan Gift, Kenneth Hopper and William Hopper**

[The Puritan Gift: Reclaiming the American Dream Amidst Global Financial Chaos](#)

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## **Living Systems**

### **The Systems View of Life, Fritjof Capra and Pier Luigi Luisi**

[The Systems View of Life](#)

This book is supported by the [Capra Course](#) which provides a 12 week course covering the four dimensions of life: Biological, Cognitive, Social, and Ecological.

A Capra Course Glossary is available in the Capra Course Alumni Network - A global Community of Practice related to the book.

See chapter 14 for information on social systems.

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### **The Hidden Connections, Fritjof Capra**

[The Hidden Connections: Integrating the Biological, Cognitive, and Social Dimensions of Life Into a Science of Sustainability](#)

Some additional information related to social systems.: See page 70 to page 128.

Principles of Ecology: See page 231.

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### **The Turning Point, Fritjof Capra**

[The Turning Point: Science, Society, and the Rising Culture](#)

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### **The Embodied Mind, Francisco J. Varela, Evan Thompson, Eleanor Rosch**

[The Embodied Mind](#)

Cognitive Science and Human Experience

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