

ROAD TO DIGITAL TWINS:

6 Powerful
Asset Management
Guidelines

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INTRODUCTION

Businesses need to adapt to the changing conditions of the economic environment every day. Such dynamism requires a strategic approach and detailed asset management plans to be able to take control of the development of enterprises.

Balancing supply and demand and responding to market dynamics can be tricky due to forecast inaccuracies, emerging trends, and ever-changing customer needs. Enterprises must rewire their value chains to meet these challenging requirements. With strategic asset management professionals will be able to do so by:

- Connecting systems and processes
- Maximizing the benefits of the latest technologies
- Establishing automated data acquisition with Digital Twins

Even organizations that are not able to take this radical approach should start laying the foundations to prepare for the more significant challenges ahead.

In this eBook, you'll discover how to create an asset management strategy, connect the enterprise systems in it, and apply and connect Digital Twins in enterprise processes and systems.

Enjoy,



Chapter 1:

Asset Management Terms Demystified

This chapter covers the basic concepts, defines the scope of asset management activities and demonstrates that this is a discipline worth exploring!

Every business wants to maximize working time, reduce costs and risk, and deliver the highest quality products or services.

To achieve these goals, the assets of the enterprise should be used and managed as efficiently as possible.

This is a series of articles on Physical Asset Management. In the first part of the series, we will look at the basic concepts in asset management and how to put them into practice.

Let's dive in!

Glossary - Introduction to Asset Management Terms

There are several key concepts in asset management. Understanding them will help you achieve your business goals.

Asset - the heart of the system

An asset is an object that has potential or actual value for an organization.

Its main features are:

- **Asset Value** - The value can be tangible or intangible, financial or non-financial. Depending on the circumstances it can be positive or negative at different stages in the life of the asset.
- **Physical assets** usually refer to equipment, inventory, property, machines, infrastructure. They can be owned by the organization, leased or used on "as-a-service model".
- Physical assets are the opposite of **intangible assets**, which are non-physical assets. For example, leasing, brands, digital assets, usage rights, licenses, reputation, and more.
- **Asset life-cycle** - the period from its creation to the end of its life
- The **life-cycle of an asset** does not necessarily coincide with the period during which an organization handles it. It can provide potential or real value to one or more organizations over its lifetime.

The organization may choose to manage its assets as groups or individually.

Asset Management - Achieving goals through value

The management of physical assets is a coordinated activity aimed at unlocking their full potential. This is achieved by managing and balancing:

- Risk
- Costs
- Benefits
- Opportunities
- Quality

Effective asset management makes the company's goals a reality by leveraging the value of the assets and their capabilities.

An activity can be classified as:

- Management Approach
- Action Planning
- Implementation of plans
- Making decisions

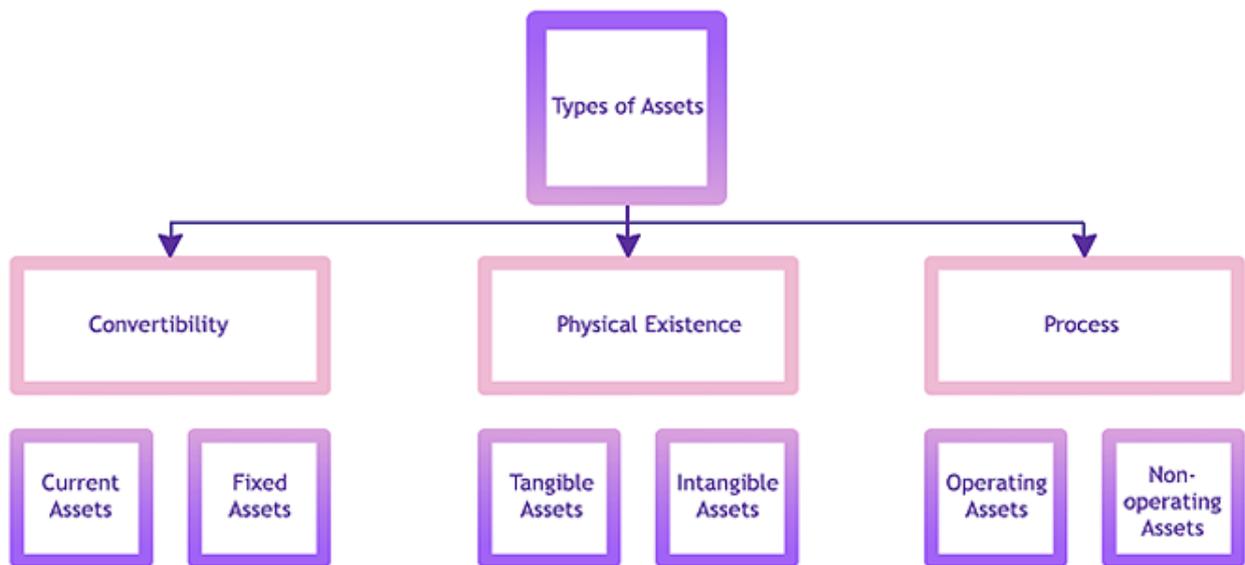
Assets Classification One-On-One

The topic of asset management can make you feel:

- 1 Astonished
- 2 Horrified
- 3 Confused

It's time to unravel the mystery of asset classification. They are usually classified in three ways:

- 1 **Convertibility:** how easy it is to convert them into money
- 2 **Physical existence:** tangible or intangible assets
- 3 **Usage:** The purpose of their business operation



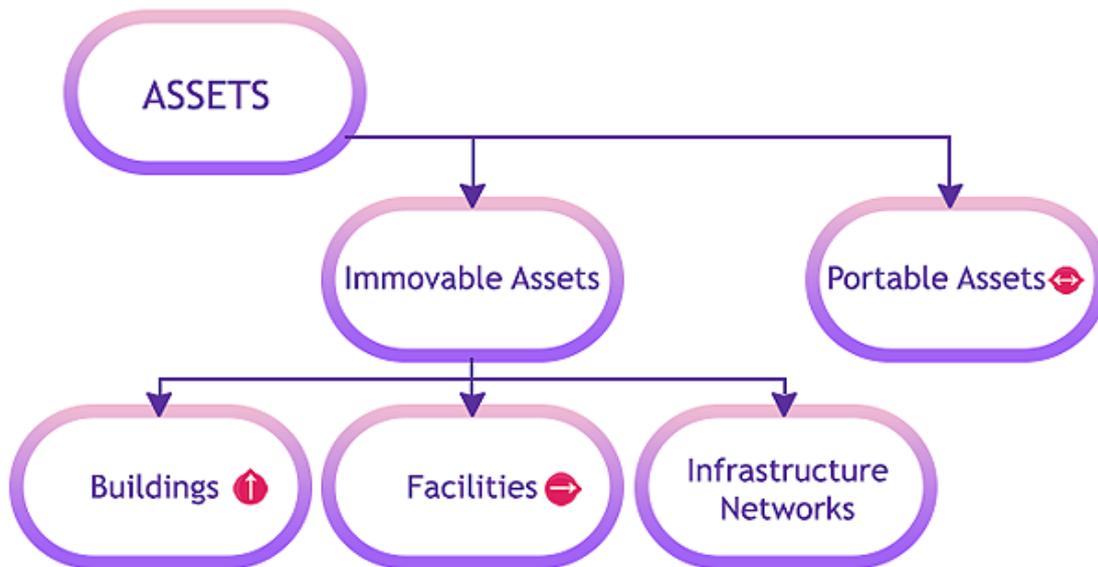
The main characteristics of asset types are:

- *Current assets* can be easily converted into cash and cash equivalents
- *Fixed assets* aren't as easy to be converted as current assets are
- You can touch, feel, and see *tangible assets* while *intangible assets* don't have a physical existence
- *Operating assets* are required in the daily operation of a business. They are used to generate revenue from a company's core business activities
- *Non-operating assets* aren't required for daily business operations but can still generate revenue

By purpose, the non-financial assets of any enterprise can be classified into two main categories:

- 1 Assets used to perform primary business functions (production machinery, light and heavy industrial equipment, manufacturing facilities, etc.)
- 2 Assets used to support business functions (buildings, vehicles, workplace facilities, IT infrastructure or equipment, etc.)

According to their function and characteristics, we can divide them in this way:



The chart shows three broad groups, all of which can be included in the context of Enterprise Asset Management (EAM):

- Infrastructure Asset Management (IAM) - Linear Asset Management. →
- Building Asset Management (BAM) - Vertical Asset Management. ↑
- Portable assets ↔

Linear Assets →

Linear assets have the sole purpose of moving something from one place to another. For example, transporting people and goods on road networks, rail networks, shipping and airlines or transmitting services to assist people such as fuel, electricity, and water

Linear assets have the following general characteristics:

- They are partially hidden from view or kept at a safe distance from people (overhead power lines)
- They cannot be moved, but they can be extended and enlarged
- They are large scale and very expensive to build
- They are designed to be very durable. Their components must have a long operating life

Vertical Assets ↑

This asset class includes buildings for the occupancy of people and equipment. They have a building shell that includes foundation, floors, walls, roof, windows, and doors. To be safe and comfortable a building requires direct service.

Vertical assets have the following general characteristics:

- Visible above ground, but hidden underground
- They cannot be moved, but they can be expanded in size
- Moderate to large in scale
- Expensive to build
- Durable

Portable Assets

It will be difficult to list all existing portable assets but we can organize them into four groups:



Vehicles - Cars, trucks, trains, buses, airplanes, and water vehicles.



FF&E - tables, chairs, paintings, and works of art



All kinds of machinery and equipment



Electronics and IT - devices, servers, computers, peripherals, and many more

How can you distinguish portable assets?

Take a small model of a building. Turn it around and shake it. All things that fall on the ground are the portable assets you are looking for.

The Framework - ISO 55000 Family

Who defines the terms as 'asset' and 'asset management'? The ISO 55000 suite.

It includes three key chapters - ISO 55000, ISO 55001, ISO 55002.

The purpose of these documents is to determine the principles by which an organization intends to apply asset management to achieve its organizational goals.

Back in 2014, these standards have reinforced the importance of asset management. They provide a clear and conventional definition of assets, their business context, and the requirements for establishing an asset management system.

How can ISO 5500, ISO 55001, and ISO 55002 be described? You can think of them as the three elements of asset management.

ISO 55000 is an overview of the subject of asset management. It defines standard terms and definitions.

ISO 55001 presents the requirements of an asset management system. This standard describes the four assets management system documents:

- ① Asset Management Policy
- ② Asset Management Objectives
- ③ Asset Management Strategy
- ④ Asset Management Plans

ISO 55002 guides implementing an asset management system

The three elements interconnected and complement each other.

NOTE: The International Standard is intended to be used for the management of physical assets. However, it may also apply to other types of assets.

Do you want to read more and go all the way
to the Digital Twins?
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