

Alice in Assetland not Wonderland

David Albrice, June 1, 2015



"I've often seen a cat without a grin. But no grin without a cat." -- Alice in Wonderland by Lewis Carroll.

Just as Alice encountered puzzling questions and shifting perspectives in Wonderland, so too do Asset Managers know that the effective stewardship of assets require solutions to new riddles that arise from time-to-time.

Riddles are best epitomized by the Cheshire Cat from Alice in Wonderland, who has a habit of appearing, disappearing and then re-appearing in any location. Each time the Cheshire Cat appears it asks vexing questions. Then it summarily disappears, where the last thing that is visible is its iconic grin, disembodied from the cat itself. Depending on your point of view, the Cheshire Cat raises philosophical points that are either annoying, baffling or enlightening.

Assets present us with a number of riddles. One such riddle is the question of where one asset ends and another asset begins? This is particularly vexing. For example, some assets start as

being highly visible, then they disappear underground or into a wall, then they re-appear somewhere else and morph into a different kind of asset altogether.

Clearly, then... the Cheshire Cat lives not only in Wonderland but also has a place in Assetland.

These riddles are serious business! If they are not solved they result in deferred maintenance, early asset failure, and poorly established budgets.

Asset management is such a broad field, encompassing so many different things, that asset managers across the world have organized themselves into groups, including: those that steward infrastructure, those that steward buildings, and those that steward plant machinery. All groups are being brought under the ISO 55,000 standard that was enacted in early 2015.

But these groups do not always have clear boundaries between them (ie. inter-dependencies) or effective asset classification within their boundaries (ie. intra-dependencies). As a result, the following problems can emerge:

- Assets get overlooked and neglected if they are not readily visible
- Assets get inappropriately prioritized due to a lack of clarity on their respective functions
- Assets get underfunded due to a lack of understanding of their needs
- Assets get mismanaged due to ineffective teamwork and misaligned control
- Assets get inadequate maintenance resulting in deteriorating condition and shortened service lives
- Asset risks get increased for those who own and operate them

The first step in mitigation of these problems is proper asset classification. While the Cheshire Cat would not hesitate to mockingly remind us that there is no such thing as the perfect classification scheme, there is tremendous value in using classification to understand the big picture.

Assets can be divided into three broad groups, all of which can be subsumed under the title of Enterprise Asset Management (EAM):

- Infrastructure Asset Management (IAM) -- the management of linear assets ("L"). This has traditionally been perceived as the realm of asset managers but it has expanded, more recently, into the next two groups.
- Building Asset Management (BAM) -- the management of vertical assets ("V"). This is the realm of facility managers, property managers, community managers and real estate managers.

- Products Asset Management (PAM) -- the management of plant machinery and portable assets (“P”). This is principally the realm of reliability engineers.

While there is obviously some overlap between these three divisions, it is the perception of chasms separating them that is really problematic and needs to be resolved with tighter classification. By threading together these three domains we can start to develop more robust strategies for the enterprise as a whole.

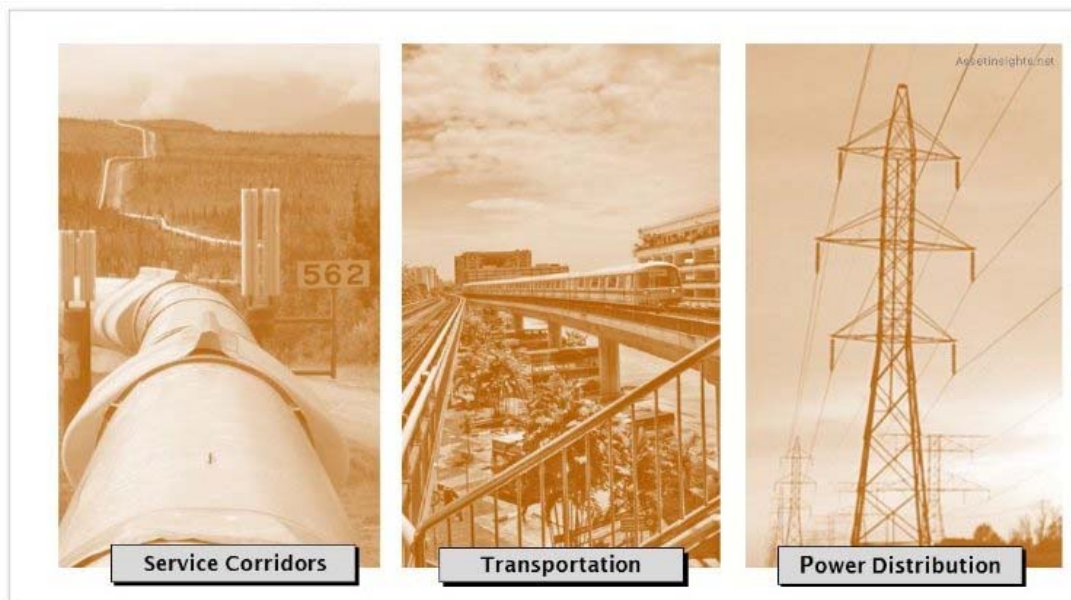
So let's take a look at this L-V-P classification scheme and see if it will withstand the Cheshire Cat's probing questions.

1. Linear Assets ("L")

Linear assets have the sole purpose of moving something from one place to another:

- movement of people and goods such as road networks, rail networks, shipping, and airlines
- movement of services to support people such as fuel, electricity, and water

This movement usually occurs in narrow corridors and often forms part of a network. The figure below includes examples of some linear assets.



Linear assets have the following general attributes:

- They are partially concealed from view such as underground tunnels or pipe chases or kept at a safe distance from people such as overhead high voltage powerlines

- They cannot be moved, except at great cost, but can be extended and lengthened, also at great cost
- They are generally upstream of vertical and portable assets as they are intended as support infrastructure
- They cross over multiple properties through statutory rights of way and easements
- They are large scale and very expensive to construct. Therefore, they are often owned by public entities rather private ones or are PPP partnerships
- They are designed to be highly durable and their components are expected to have long service lives

The Cheshire Cat might ask why some linear assets stand as tall as vertical assets. If a pylon stands tall like a building, why is it not a vertical asset? In response one would say that a building is a standalone entity whereas a pylon is not. A single pylon is a meaningless, useless thing which only gains its value from being connected to a grid of pylons.

2. Vertical Assets ("V")

This class of assets includes buildings to hold people and equipment. These buildings have two key facets:

- the building shell which includes the foundation, floors, walls, roof, windows and doors
- services to directly operate the building safely and comfortably for people which includes pumps, fans, motors, and lights

The figure below includes some examples of vertical assets.



Vertical assets have the following general attributes:

- They are clearly visible above ground but concealed below ground
- They cannot be moved but can be extended and expanded in size at moderate cost
- They are generally downstream of linear assets (which serve as their support infrastructure) but upstream of portable assets (in their role as containers)
- They usually occupy space on a single property
- They are moderate-to-large in scale and expensive to construct.
- They are designed to be highly durable and their components are expected to have long service lives

The Cheshire Cat might ask why a pump that can be unbolted from the floor in the mechanical room and removed should not be considered a portable asset. In response we would say that pump's primary purpose is to support the services in the building. It is therefore a component of the vertical asset. If it did not directly serve the building (like plant machinery for business) it would be a portable asset.

3. Portable Assets ("P")

This class of assets includes two main things:

- Equipment and plant machinery that occupies space within buildings for the benefit of the people/business in the building
- Vehicles to transport things along the linear assets

The figure below includes some examples of portable assets that can be found inside buildings.



While the list of portable assets is endless, they can be organized into four groups, as follows:

- Group 1: Fleet/Vehicles - cars, trucks, trains, buses, planes, and water vehicles.
- Group 2 : FF&E - tables, chairs, pot plants, paintings, and artwork
- Group 3: Plant Machinery and Specialties - teaching equipment, food services equipment, and library equipment
- Group 4: Electronics & IT - servers, computers, and printers

Portable assets have the following attributes:

- They are clearly visible at all times
- They are not permanently affixed to either linear assets or to vertical assets
- They are independent of the building
- They are downstream of linear assets and vertical assets as they need them for their support.
- They are relatively small scale (compared to buildings and infrastructure). They often occupy space within single rooms
- They are often less expensive to construct but do have materiality as a group
- They are designed to be of moderate to low durability
- They are managed differently to linear and vertical assets because their failure is felt differently

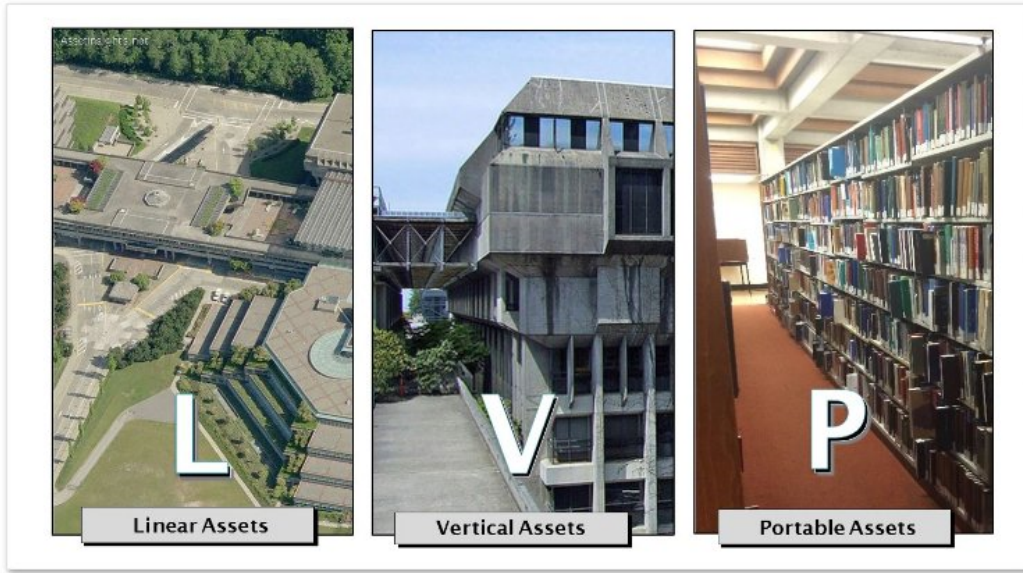
The Cheshire Cat might ask what differentiates a pump that is there to service a building from a pump that is part of plant machinery. If you were to turn the building upside down and shake it, anything that fell out would be considered a portable asset. This is no different to one business moving out of a building and a new business moving in with new equipment.

4. L-V-P Integration

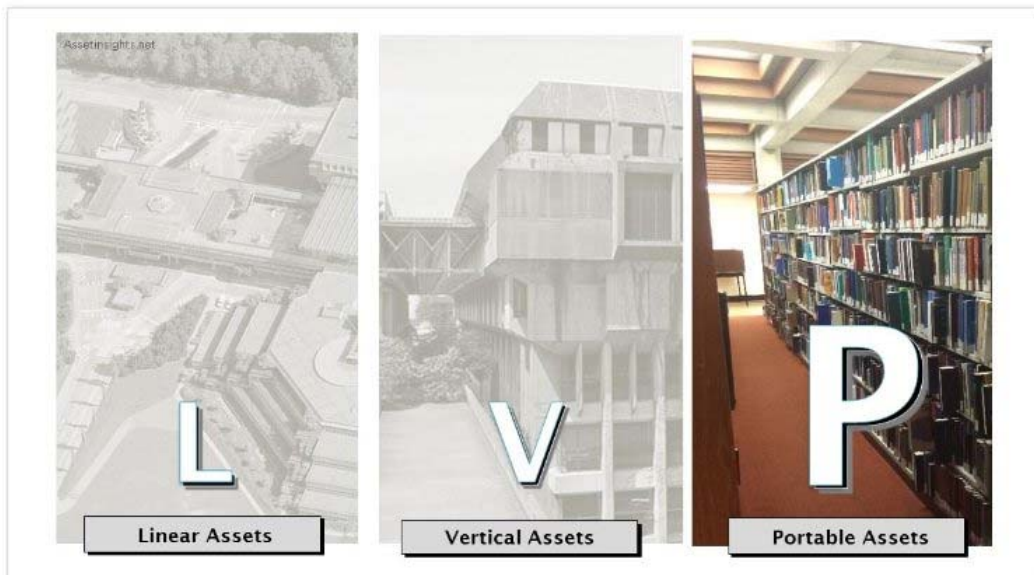
Asset managers all have two things in common:

- the primary goal of realizing value from their assets (L,V, and P)
- the common challenge of insufficient funds to manage all their assets

The combined asset registry for all three classes (L, V and P) is captured in an Asset Management Plan (AMP). This is a massive undertaking that requires the coordination of various departments within the organization using common standards for asset identification, asset description, asset quantification and asset valuation.

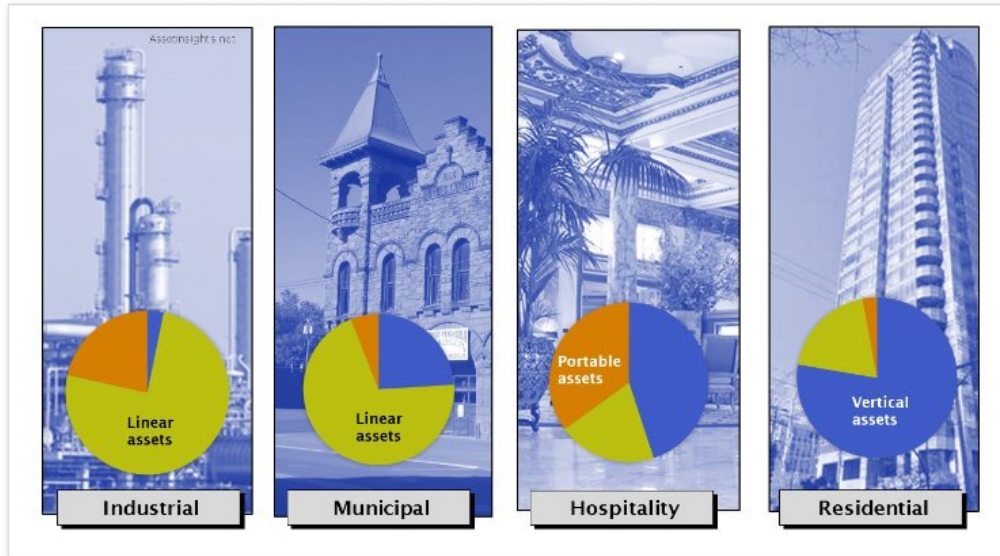


The staff within each asset domain (L, V or P) will have perceptions about the relative value of their domain compared to the others. The following figure provides an example of how some enterprises may view their portable assets (P) as being top priority with secondary consideration given to vertical (V) and linear (L) assets.



This can happen when the portable assets (P) are connected directly to the bottom line on the balance sheet and the linear assets (L) and vertical assets (V) are relegated to low status or neglected until something fails. This is why infrastructure deficits and facility maintenance backlogs are common in some industries.

The following figure illustrates the distribution of capital costs across the L-V-P asset classes within different real estate sectors.



Each fiscal cycle, the stewards of the three asset classes often re-evaluate the present state and future needs of the assets under their respective mandates and vie for a limited funding envelope. This is often done in isolation without consideration of the larger L-V-P ratios.

Part of the solution to proper harmonization and balancing of the funding distribution across the three asset classes is an understanding of the L-V-P framework and the attributes of each class.

When thinking about the Cheshire Cat's puzzling questions, two things emerge as being the most fundamental challenges to the effective integration and management of L-V-P assets within a single system:

- The nature of asset failure, and the economics of failure, is dramatically different for each asset group
- The stakeholder interests as well as the decision-making and policy-making procedures are different for each asset group

In Assetland things are indeed as puzzling as in Wonderland.

Do you have a good sense of the ratios of linear (L), vertical (V) and portable (P) assets in your portfolio?

David Albrice is a Senior Asset Management Specialist at RDH Building Engineering Ltd. His experience with asset classification comes from his work developing comprehensive asset registers for dozens of clients in different sectors, including commercial, industrial, institutional, municipal and residential. David can be followed on [Twitter](#) and additional asset management articles can be read on [LinkedIn](#).