

## Innovation & ISO 5500x: Friends or Foes?

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In reading this title you may have decided to read on from one of two angles of curiosity. The first may be that you have held a concern about this, and are seeking an informed view to help you form or refine your own opinion. The second may be that you are wondering why the question is even being asked.

For either case, let's first set the scene by clarifying definitions of innovation and standards and comparing the nature of innovation and the nature of standards in general.

### “INNOVATION” & “STANDARDS” DEFINED

The word innovation comes from “*in*” and “*nova*” which are the Latin words for, respectively, “*into*” and “*new*”. Based on this, innovation is about a whole change rather than an adaptive or “continuous” improvement of something that is already in place. We can think of innovation as moving *into* something new or ‘*changing the game*’ rather than working on some *prevailing* means to an end *from the outside* to improve it or ‘*playing the game more skillfully*’.

It is important that this distinction between innovation and continuous improvement is made because to discover, develop and implement an innovative change is to break the status quo, and that invariably calls for highly deliberate action. Efforts to innovate, rather than just continuously improve, by looking outward into the unknown is the necessary precursor to:

1. improvement opportunities beyond expectation being discovered and developed and;
2. survival, (otherwise known as achieving a balance between performance, cost and risk) more and more in our rapidly changing context.

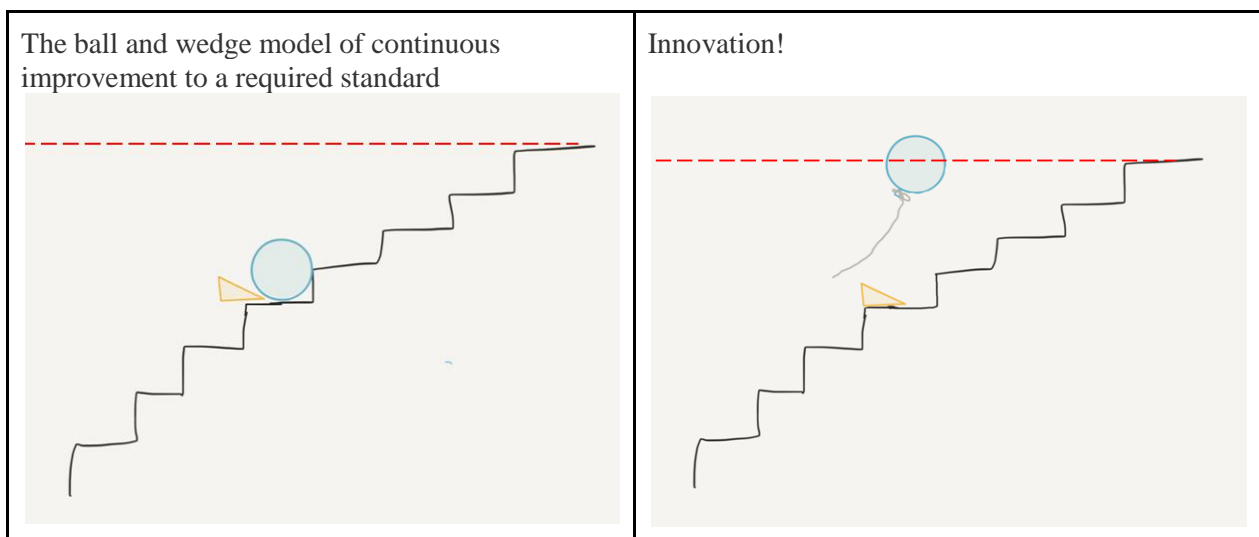


Figure 1. Another way of contrasting continuous improvement and innovation

Standards Australia describes standards as "documents setting out specifications, procedures and guidelines" that "are designed to ensure that products, services and systems are safe, reliable and consistent." Wikipedia simply defines a standard as a: "Norm, convention or requirement".

To develop this further, compare attributes of innovation with corresponding characteristics of typical standards:

REF. #	ATTRIBUTES OF INNOVATION	ATTRIBUTES OF TYPICAL STANDARDS
1	Potentially infinite sources of inspiration	Single, set source of direction
2	Varied angles and approaches are encouraged	Prescriptive
3	Risk taking is typically necessary and opportunity is an equally relevant uncertainty	Risk minimising
4	Poses questions such as "what if....?" and "how else might we.....?"	Uses words such as "shall" and "must"
5	Circumvents the norms	Drives toward conformity and norms
6	Seizes advantage from fast changes and speed	Slow to change and cautionary
7	Looks out not only for "known unknowns" but "unknown unknowns"	Assumes a predictable environment
8	Empowers practitioners	Instructs practitioners
9	Focus is on ultimate goals	Focus is on the subject at hand
10	About achieving outcomes beyond expectations	About meeting the required level of compliance

*Table 1. Comparison of the attributes of innovation with those of typical standards*

### **CAUGHT BETWEEN POWERFUL ENEMIES?**

In asset management, we presently have the global ISO 5500x standards gaining strong inertia in importance as certification is being made mandatory and an integral part of contractual arrangements. This is being driven by regulators, governments, public utilities and clients.

At the same time, innovation is emerging as a necessity to meet increasing stakeholders' performance expectations amid tightening cost and risk constraints for organisations with responsibility for major asset portfolios. There is an imperative for us as asset managers to embrace innovation and in fact, we have little choice with the rapid emergence of technological shifts alone via the internet of things, nanomaterials, big data, driverless vehicles and drones, etc.

As asset managers we may appear to be in a position analogous to the famous 19<sup>th</sup> century French-Canadian strongman Louis Cyr shown in the picture below, poised to restrain two powerful draught horses (representing the need to innovate and the need to adhere to the ISO 55001 requirements) moving in opposite directions. By attempting to both combine innovation and standards to achieve successful management of the assets of our customers, are we heading for failure?



Figure 2. 19<sup>th</sup> century strongman Louis Cyr preparing to restrain two draught horses

To answer this and to act effectively in this role, it is vital that we understand the relationship between ISO 5500x and innovation before setting down our strategies and action plans.

### ISO 5500x ON INNOVATION

While as a suite of standards, ISO 5500x by definition must be somewhat linear and directive to be of value, its position regarding innovation can nevertheless be assessed by examining its content with reference to the innovation attributes listed earlier. The results are as follows:

REF. #	ATTRIBUTES OF INNOVATION	RELEVANT ISO 5500X CONTENT EXAMPLES	COMPARISON WITH ATTRIBUTES OF TYPICAL STANDARDS
1	Potentially infinite sources of inspiration	(0) 1. "This International Standard can be applied to all types of assets and by all types of organizations."; (0) 2.3 "An asset is an item, thing or entity that	Sets an open field scene rather than pointing to a single, set source of direction

		<i>has potential or actual value to an organisation”;</i> <i>(2) “Planning should also consider solutions that do not require additional assets”</i>	
2	Varied angles and approaches are encouraged	<i>(0) 2.5.2 a) “..creating an asset management system brings new perspectives to the organization and new ideas on value creation...[and] can also stimulate improvements in other organisational functions, such as purchasing, finance, human resources and information technology.”;</i> <i>(0) 2.5.3.5 “The asset management system will require collaboration among many parts of the organisation.”</i>	Encourages the drawing of direction from various sources rather than being prescriptive
3	Risk taking is typically necessary and opportunity is an equally relevant uncertainty	<i>(0) 2.4.1 “to exploit opportunities and reduce risks”;</i> <i>(1) 6.1 “determine the risks and opportunities..”;</i> <i>See also 6.2.2 k);</i> <i>(2) 6.1 “In this International standard it is assumed that “risk” also includes opportunities”</i>	Promotes attention to opportunity as well as risk (even though it does not directly reference the need to take risks at appropriate times)
4	Poses questions such as “ <i>what if....?</i> ” and “ <i>how else might we.....?</i> ”	<i>(1) 4.1 “The organisation shall determine external and internal issues that are relevant to its purpose...”</i>	The terms “shall” is used (> 70 times), but it tends to be used at a high level and allows a broad scope
5	Circumvents the norms	<i>(2) 6.2.2.1 “There is no set formula for what should be included [in the asset management plan] or how it should be structured”</i>	Allows the organisation to shape the outputs as it sees fit rather than driving toward conformity and norms
6	Seizes advantage from fast changes and speed	<i>(2) 6.2.2.1 “There can be benefits to developing the first asset management plan as an interim plan as quickly as possible”</i>	Recognises the value of moving quickly when appropriate and is flexible enough to accommodate change as needed rather than being slow to change and cautionary
7	Looks out not only for “known unknowns” but also for “unknown unknowns”	<i>(0) 2.1 “The factors which influence...how the assets are managed, include... - its operating context; - its financial constraints and operating requirements; - the needs and expectations of the organisation and its stakeholders.” (1) 6.2.2”The organisation shall ..take into account relevant requirements coming from outside the asset management system.”;</i> <i>(2) 6.2.2.4 “The organisation should consider the</i>	Acknowledges that assets need to be managed in an unpredictable environment and that this environment should be explored and taken into account

		<p><i>risks that can change with time and how these could impact the asset management plan in the future”;</i></p> <p><i>(2) 9.2.3 “[Self assessment] requires assessment of: a) assumptions related to the organisation’s asset management”;</i></p> <p><i>(2) 9.3.2 “management reviews should include: ..b) changes in external and internal issues, .... including.. changes in technology, and..market requirements”</i></p>	
8	Empowers practitioners	<p><i>(0) 2.4.2 “ensuring that employees are aware, competent and empowered”;</i> <i>(2) 9.2.3 “[Self assessment]...should encourage participants to identify opportunities.... Active participation, understanding and support of the organisation’s employees are important in conducting a self-assessment review.”;</i> <i>(2) 10.3.2 “[Continual improvement] processes may include: ....g) stimulating employees to come forward with suggestions”;</i> <i>(2) 10.3.3 “The organisation should actively seek and acquire knowledge about new asset management-related technology and practices..”. Examples are then provided as to where these may be gathered eg “conferences, ..publications, (online forums) ..benchmarking and technology transfer initiatives”, etc.</i></p>	Promotes the empowerment of internal practitioners in gaining knowledge about new methods and technologies and in challenging the way work is carried out, rather than exclusively instructing them on how things must be done
9	Ultimate goal focussed	<p><i>(0) 2.4.2 “Value: Assets exist to provide value to the organisation and its stakeholders. Asset management does not focus on the asset itself, but on the value...(which can be tangible or intangible, financial or non-financial)..determined by the organisation and its stakeholders..”</i></p>	Is clear that ISO 5500x is not ultimately about the asset or the asset management system but the value provided
10	About achieving outcomes beyond expectations	<p><i>(2) 4.4 “Compliance with all the requirements of ISO 55001 should be considered as achieving only the minimum starting point for an effective asset management system and should not be seen as the final goal.”</i></p>	States that compliance is not the destination but the start of the journey

*Table 2. Analysis of ISO 5500x relative to the attributes of innovation and those of typical standards*

The standards exist for a purpose, which does not include promoting or enhancing innovation but to help organisations align with “the requirements for the establishment, implementation, maintenance and improvement of a management system for asset management” (ISO 55001 Introduction).

Accordingly, there are many elements of ISO 5500x which align less with innovation and more with what would be expected from a standard. This analysis is based solely on

focussing on its innovation-positive aspects. The validity of the assessment can be supported from two different perspectives:

1. Considering the rigour involved in the development of ISO 5500x standards, and their global level of acceptance, it may be concluded that the standards would not be self-contradictory or inconsistent in its key messages. That is, it can be understood that other clauses would not be innovation-restricting or be too closely aligned with the presented attributes of typical standards, without needing to capture all ISO 5500x clauses in the analysis.
2. ISO 5500x is a high level suite of standards for asset management as reflected by the fact that the requirements standard ISO 55001 is just 32 pages long and the nature of the core section subjects (namely: Context of the Organisation, Leadership, Planning, Support, Operation, Performance Evaluation and, Improvement). With the scope being defined as applying to “...all types of assets and by all types of organizations”, it seems impossible for the standard to tightly display the restrictive traits of typical standards. Further, throughout ISO 5500x, the power is placed firmly with the organisation to make the decisions on application of the standards or how the requirements will be met.

## CONCLUSION

While this analysis cannot confirm ISO 5500x and innovation to be “friends” it is clear that the spirit of the ISO 5500x suite of standards is not in opposition to innovation as a “foe”. Given that they neither directly boost each other or impede each other but can operate in concert in the same asset management environment, *acquaintances* would be a suitable term.

So, as asset managers we are free to steer our asset vehicles into alignment with the ISO 5500x standards *and* press the innovation accelerator pedal at the same time. It is up to us and how well we interact with the key stakeholders around us that will determine our level of success in delivering maximum value from the assets we manage in new ways. If we feel that ISO 5500x is restricting efforts to innovate in any way, we could then identify and check the local interpretations of the standard instead of the standard itself. In doing this, we may find that the limitations are based more on our preconceptions than the standard itself. Once these preconceptions are overcome, perhaps using assessments such as those made in this article, we can advance with the innovation activity that ISO 5500x supports us to do.