

# A Perspective on Innovation Management Systems for Innovation Continuity

# Dr Benjamin W Watson PhD BSc/ MDes (Hons) CEng CTPD CEnv MIED LCGI

Trustee and Councillor Institution of Engineering Designers - UK&I ISO Standards Workgroup Member for Innovation Management Systems - International Innovation Leader & Lead Research Specialist, 3M - Global

We can understand innovation success through four key levers, comprising creative collaboration, the innovation mind-set, innovation culture and systems of work.

It is the interplay between these levers that provides a basis for the two necessary conditions of capability and need. If we accept that necessity is the Mother of all invention, we can recognise capability as the Father, whereby simply having a need or a capability in isolation, is not sufficient for innovation success.

Drivers for innovation can range from the need to self-renew due to external threats and opportunities, the quest for profitable growth, whilst sustaining competitive advantage in existing markets. The first two levers of collaboration with customers and other partners, combined with the innovation mind-set can help to identify needs, framing challenges from new perspectives, to pursue new solutions.

These first two levers combine with organisational structures contributing towards a culture of innovation and the necessary systems of work for commercial success.

# What is Innovation?

This short paper outlines proposed conditions for systematic innovation, with four levers of innovation success; collaboration, mind-set, culture and systems of work.

Embedding innovation within the organisation, provides a basis for profitable growth and self renewal, with business continuity programmes shaping disruptive market forces, customer needs and emerging technologies, to their advantage.

Innovation can be described as a framework for change that leads to solutions with positive social, environmental and commercial impact.

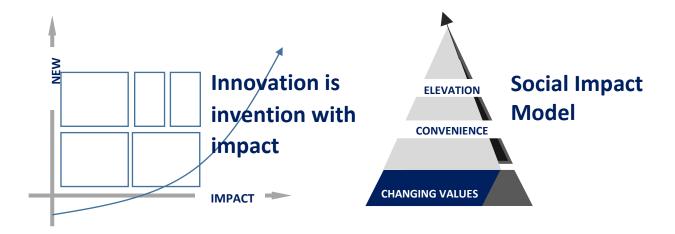
# **Innovation is Invention with Impact**

Linking invention to impact, moves invention into innovation, with technical novelty, know how, the means of production and intellectual property protection as barriers to entry, for competition. This is what differentiates innovation from other value realisation, such as your local grocery store selling what they've always sold in the same way they've always sold it. Without this, all value realisation becomes innovation.

We can understand impact in terms of financial gain, access to new markets and the social benefits arising from the innovation. The extent to which innovation outcomes are considered new and impactful is relative to the beliefs of those impacted by the innovation, with the two dimensions of newness and impact, used to classify levels or classes of innovation output, the extent to which these solutions can be considered innovative or not.

The following model offers three categories of social impact, to either elevate the beneficiary through hierarchies of need, improve accessibility or convenience to meet those needs, respond to or drive external shifts and changing values. See Figures 1 & 2.

Fig. 1 & 2: Proposed Model for Innovation Impact





Systemic Innovation Special Interest Group (SISIG)
Systems Council Chapter
IEEE UK & Ireland

# **Innovation Management Systems**

ISO Technical Committee TC279 has been developing new international guidance for innovation management systems (IMS) following the foundation of the TC279 charter for IMS in 2013, with more than 40 countries contributing towards the development of the standard.

The new ISO Innovation Management System (IMS) is a consensus-based approach that can be used to develop and guide the management of innovation, with standardised terminology, tools, methods and guidance to manage interactions between partners, intellectual property, strategic intelligence, and more recently Idea management.

With the right implementation the IMS standard has been positioned to support organisations seeking sustained innovation success by developing their ability to lead innovation activities, to embed design and innovation into their organisation and provide a level of assurance that good practice is being followed.

IMS is based on seven parts (see table 2), with eight innovation management principles (see table 3), to help achieve the following benefits, shown in table 1.

Without doubt, developing and deploying innovation management systems within your organisation requires a certain level of adaptation, where different types of organisation with different levels of innovation will require different approaches and organisational structures. This presents a significant challenge to the adoption and the success of any standardised systematic approach to innovation.

First and foremost we should recognise that no system of work guarantees success, only the increased likelihood of success. This is made increasingly difficult when systems for managing the innovation process fail to consider the different implementations necessary for different types of organisations or teams that may be focussed on different levels or 'classes' of innovation impact.

The high level nature of IMS guidance makes it even more critical to be implemented with the necessary understanding behind each of the key principles, to translate the guidance into a working system.

# Table 1: Innovation Management System - Potential Benefits (Extract ISO/FDIS 56002)

1.	Increased growth, revenues, profitability, and competitiveness;
2.	Reduced costs and waste, and increased productivity and resource efficiency;
3.	Increased satisfaction of users, customers, and citizens, as well as social benefits;
4.	Sustained renewal of the portfolio of offerings;
5.	Engaged and empowered people in the organization;
6.	Increased ability to attract partners, collaborators, and funding;
7.	Enhanced reputation and valuation of the organization;
8.	Compliance with regulations and other relevant requirements.

**IEEE UK & Ireland** 

# A framework to Challenge, Protect and Grow

With the right implementation, the IMS guidance may be used to enable innovation as both a growth generator and a vehicle for business continuity, a framework to handle changing market forces and competitive technologies that may threaten the organisation. Guidance standards can be used to provide a level of assurance that the organisation has the necessary processes and systems in place, people, partnerships and platforms to be successful. Furthermore, if there is a need for organisational change, the IMS may be used as a framework to carry out that change.

Table 2: Innovation Management System –Guidance ISO 50500 Series

ISO/CD 56000	Innovation ManagementFundamentals and vocabulary
ISO/FDIS 56002	Innovation Management System
ISO/TR 56004	Innovation Management Assessment
ISO 56003	Innovation Management Tools and methods for innovation partnership
ISO/AWI 56006	Innovation ManagementStrategic intelligence management
ISO/AWI 56005	Innovation Management Intellectual property management
ISO/AWI 56007	Innovation ManagementIdea management

# The Four Levers for Innovation Success

### **Lever 1: Creative Collaboration**

Creative collaboration is central to the realisation of value, developing high performing teams, customer intimacy, empathy and foresight, inside and outside of the organisation. This collaboration improves engagement with customers, development partners and the value chain, with creative collaboration as a multiplier for your creative output and innovation pipeline.

### **Lever 2: Innovation Mindset**

The innovation mind-set is one of perseverance, with the mental agility to handle complexity, to realise value through uncertainty. Exercising the innovation mindset enables the simulation of interdependencies and systemic representations of future solutions, framed within the mind of the innovator, articulated among teams of innovators, leading to new ideas and solutions. When we exercise the mind in this way, alternating the frame of reference through which the challenge is viewed, we can then question those ideas, the problem to be solved, the requirements, needs, and the value to be realised from a design solution.



For example, roadblocks to a particular solution can often be overcome in a different way, whilst remaining true to the need you are trying to solve, how you intend to move your customer through the social impact model, ease access to a particular service, respond to changing values or move them up the value chain.

# Lever 3: Systems of Work

As we've already discussed, systems of work provide a framework to embed innovation within the organisation, to guide innovation practice as a universal bench mark and framework for organisations to follow, evaluating their own performance, maximising the efficacy of innovation practice.

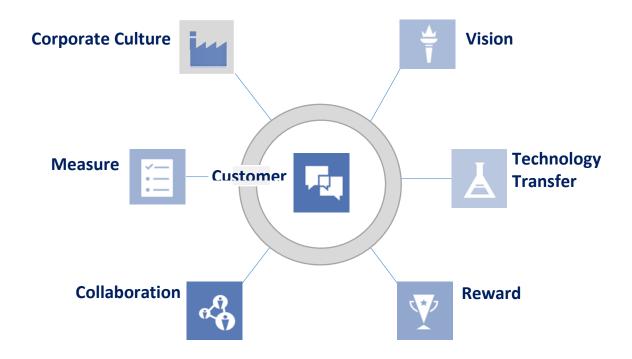
It's important to consider all aspects of the innovation organisation, from talent development, organisational structures, guidance on partnerships and operational processes, in a way that supports continuous improvement and quality assurance.

### **Lever 4: Innovation Culture**

Whilst Peter Drucker once famously said that culture eats strategy, we should also be reminded that you are what you eat.

You don't build or put a culture in place, however, it can be grown through the introduction of value systems, beliefs, processes and practice that set the right example for the culture you hope to achieve and then recognise those achievements, not only by rewarding the teams but also by setting the right levels of expectations and metrics for innovation success.

Fig. 3. 3M Corporation Pillars of Innovation





# Systemic Innovation Special Interest Group (SISIG) Systems Council Chapter IEEE UK & Ireland

Key elements comprise a clear vision and investment of resources to deliver that vision, with leadership values and behaviours that resonate within your teams, with a commitment to doing business in the right way and giving your people the freedom to innovate.

Any innovation culture is first and foremost a permissive culture: one that ensures the freedom for people to pursue new challenges, embrace failure and persevere. Whilst commercial organisations cannot simply accept continuous failure, it is important that permission to fail is supported and the nature of an organisations people is to see failure as a learning opportunity, to then find a way to succeed.

3M is one organisations that achieves this freedom upheld through the McKnight Principles. McKnight was chairman of the board at 3M, from 1929 to 1966 and his philosophy can be summed up by hiring good people and supporting them to do their jobs in their own ways, tolerating mistakes.

This permissive culture is also made possible by the type of boundaryless behaviour you will find in organisations such as 3M, where no single division owns any one technology platform and collaboration is driven in a very purposeful way through internal and external technical and customer engagements.

### Table 3: Innovation Management Principles (ISO/CD 56000 Extract)

### Realization of value

The purpose of innovation management is to realize value, through the process of identifying, understanding, and satisfying needs of interested parties. Realizing value, both financial and non-financial, is vital to the sustainability of organizations.

### Future-focused leaders

Leaders at all levels, driven by curiosity and courage, challenge the status quo by building an inspiring vision and purpose, continuously engaging people to achieve those aims.

### Strategic direction

The direction for innovation activities is based on aligned and shared objectives and a relevant ambition level, supported by the necessary people and other resources.

#### Cultura

Shared values, beliefs, and behaviours, supporting openness to change, risk taking, and collaboration, enable the coexistence of creativity and effective execution.

# Exploiting insights

A diverse range of internal and external sources are used to systematically build insightful knowledge, to exploit stated and unstated needs.

### Managing uncertainty

Uncertainties and risks are evaluated, leveraged, and then managed, by learning from systematic experimentation, and iterative processes, within a portfolio of opportunities.

### Adantability

Changes in the context of the organization are addressed by timely adaptation of structures, processes, competences, and value realization models to maximize innovation capabilities.

### Systems approach

Innovation management is based on a systems approach with interrelated and interacting elements, and regular performance evaluation and improvements of the system.



Systemic Innovation Special Interest Group (SISIG)
Systems Council Chapter
IEEE UK & Ireland

# **Closing Note:**

This paper highlights the importance of both capability and need for invention with impact, aligned to the direction of the organisation. Whilst Innovation management systems support innovation continuity, we cannot rely solely on these frameworks.

The most important thing is to match the needs and the future needs with capability to achieve the right balance for positive outcomes, to sustain innovation, meet and shape the future needs of society in a positive way.

This paper is an expression of the opinion of the author and not any of the organisations referred to within the document.