

Digital Wisdom Management Ecosystem for Enhanced High-performance Organizations Participating in Sustainable Development According to the Sufficiency Economy Philosophy

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Received: 25 May 2024; Revised 4 October 2024; Accepted 31 December 2024

ABSTRACT: *This study used a literature review method. To develop a learning organization (LO) into a high-performance organization (HPO), it is necessary to develop people's intelligence through knowledge management, to promote the conversion of information level knowledge into intellectual knowledge by applying digital technology. Increasingly, innovative technologies are being developed to be deployed on online networks without boundaries. Cloud computing is at the forefront of this phenomenon. The “cloud” comprises five core components: clients; applications and services; platform; storage and infrastructure. The cloud is helping to promote new ways of working and living that will lead to greater sustainability according to the “Sufficiency Economy Philosophy”.*

Keywords: Digital Wisdom Management Ecosystem, High Performance Organization, Sustainable Development, Sufficiency Economy Philosophy

1. Introduction

Thailand's 20-Year National Strategy (2018-2037) (Office of the National Economic and Social Development Council, 2018) defines the vision for Thailand, “Thailand is a stable, prosperous, sustainable, developed country, with continuous development according to the Sufficiency Economy Philosophy”. As part of Thailand's national strategy for human resource development and capacity building, to become a highly skilled innovative country, it is necessary to commit to sustainable intellectual management. In the context where the country is undergoing rapid changes in the new digital age, this is in line with the 12th National Economic and Social Development Plan (2017–2021) (Board Office of the National Economic and Social Development & Minister Office of the Prime, 2017), in terms of manpower preparation and the capacity building of people of all ages, with the focus on human development in all dimensions and in all ages as human capital with high potential.

The management of digital intelligence, therefore, is an important and challenging issue in this regard in the 21st century and depends on many factors, including people in each organization, digital intellectual management processes, and relevant technology.

2. Literature review

2.1 Digital Wisdom Management

Digital wisdom management is a process where raw data and information is transformed into usable knowledge and capabilities in life and in practical applications in the digital age. It is, therefore, a process of intelligent knowledge management covering four main areas, as follows:

1. The ability to manage oneself to keep up with change or to lead change.
2. The ability to create value from knowledge
3. The ability to survive and grow continuously.
4. The ability to foresee the future needs or opportunities for substitute parts by looking at how knowledge management is currently being done to find solutions to match future needs.

To achieve the wisdom management, probing is needed at the people level and at the organizational level to set the path for wisdom development:

1. People Level:

- 1.1 What do people need to know in order to keep up with change?
- 1.2 What do people need to know in order to be creative?
- 1.3 What do people need to know to survive and grow? and
- 1.4 What do people need to know in order to foresee the future?

2. Organizational Level: What kind of knowledge is needed to enable an organization to keep pace with changes or to lead change? What kind of knowledge enables an organization to be creative and create value? Or to survive and keep growing? And what kind of knowledge allows an organization to foresee the future? (Department of Health, n.d.)

2.2 Cognitive Manipulation according to Yamazaki's Pyramid of Learning

To set the direction of digital intelligence management, Yamazaki's learning pyramid (Figure 1) breaks down the process into four steps and shows the sequence in knowledge management of data collection and its transformation from information level information to cognitive level knowledge or wisdom (Frické, 2019).

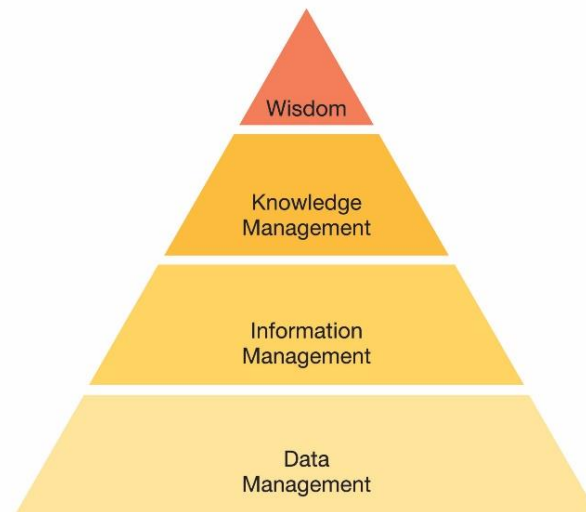


Figure1. Yamazaki's learning pyramid - Adopted by: Mathuwan Srikong

1. The data management in the bottom step of this pyramid refers to the information that arises from the raw data obtained from observations or facts and that has not yet been analyzed or organized into categories.
 2. The second step involves information management where the source data is managed and classified into various categories for the users' convenience and benefit after the analytical process.
 3. Knowledge management forms the next steps where the information goes through a comparative thinking process and is linked to other knowledge until an understanding or internal knowledge is acquired and spreads to common knowledge. Here, the skills and experiences of people account for about 80% of general knowledge (Tacit Knowledge). Having tacit knowledge is useful in summarizing and making decisions from causal and consequential knowledge, which could also formally be described or paraphrased in the form of a theory.
- It also follows that troubleshooting, either manually or in the form of a database, is possible in this step. Typically, only 20% of knowledge is considered explicit knowledge, and the process of transformation and the creation of such knowledge is called the knowledge spiral process, as highlighted in the SECI (socialization, externalization,

combination, internalization) model proposed by Nonaka and later refined by Takeuchi. This model can be divided into four types as follows and as shown in Figure 2.

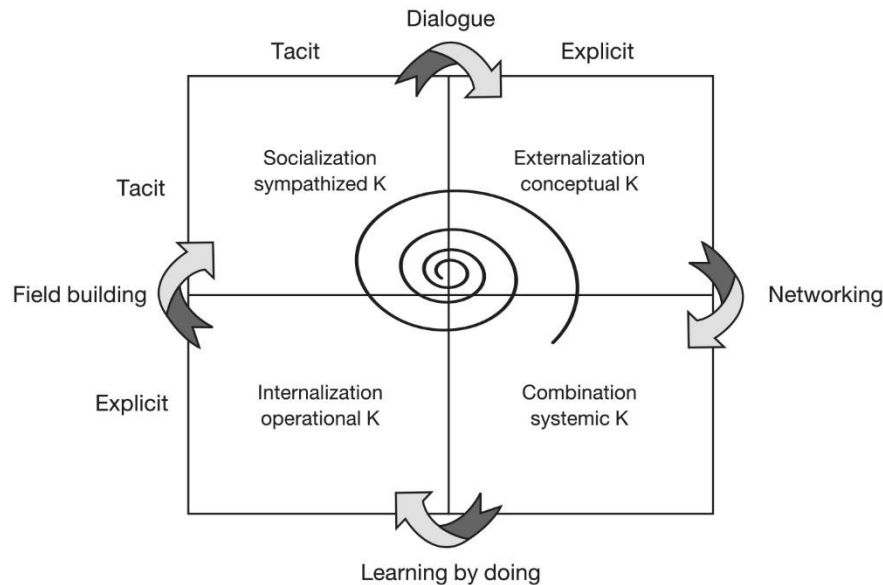


Figure 2. Nonaka and Takeuchi's knowledge spiral (redrawn after Morabito, Sack, & Bhate, 2017)

1. Socialization. The first step in exchanging knowledge is building tacit knowledge from coworkers' tacit knowledge, with the coworkers sharing their own direct experiences.
2. Externalization. This is the second step in creating and sharing knowledge from what is available and disseminating it in writing, thus converting knowledge from tacit knowledge into explicit knowledge.
3. Combination. This is the third step in the transformation of initial knowledge, in which new types of explicit knowledge are created from the learned explicit knowledge.
4. Internalization. This is the fourth and final step in converting knowledge from explicit knowledge into tacit knowledge, where the knowledge learned is applied to the real practice or daily life.
4. The top step of the pyramid is wisdom. Wisdom is the ability to process and apply knowledge in all areas to solve problems or to develop something better.

2.3 His Majesty King Bhumibol Adulyadej's Wisdom Management Process

His Majesty had a strong interest in human development, saying, "It has to explode from the inside". This means to strengthen the people in the communities developed. They need to be ready for development, and we should not just seek to bring prosperity or people in from the outside society in to a village community that has not yet had the opportunity to prepare for the change, which is in line with the Sufficiency Economy Philosophy (SEP), whereby the "sufficiency economy is a foundation for life". Here, an analogy is to consider the stable foundation of the land when a pile is hammered in to support a house. The building itself can be stable only when the piles are correctly placed, but most people do not even see them and so forget about them (Adulyadej, 1970). Therefore, we should develop people to be ready according to the management of wisdom based on the SEP approach first, so that the country will be truly ready to develop along a strong path toward sustainable progress.

2.4 Sufficiency economy philosophy

The sufficiency economy is a royal initiative proposed by His Majesty the King over 30 years ago. It is a concept that is based on Thai culture as a foundation for development based on moderate practice and prudence. It takes into account moderation, rationality, and self-immunity to protect from the impacts arising from internal and external change, as well as the use of knowledge and virtue as a basis for living. Most importantly, there must be consciousness, wisdom, and perseverance, which will lead to happiness in living a true life of meaning. Therefore, the SEP consists of the following features:

1. Modesty, meaning moderation, that is striving for neither too little nor too much, and living without encroaching on oneself and others, such as balancing production and consumption at a moderate level.
2. Reasonableness, referring to the decision about the level of sufficiency, which must be reasonable when considering all relevant factors as well as taking into account the expected consequences of actions.
3. Immunity, which means being prepared for the impacts and changes that can occur taking into account the possibility of various situations that could be expected to occur in the future.

There are two conditions to be considered when making decisions and carrying out various activities, to ensure they are at the sufficiency level, as follows:

1. Knowledge conditions which consist of knowledge about various related academic fields. Here, prudence is needed to take such knowledge into account and to connect various fields of knowledge to support planning and caution in implementation.
2. Moral conditions which must be strengthened and applied, consisting of an awareness of virtue, honesty, patience, perseverance and the use of intelligence in all areas of life. (<https://www.chaipat.or.th>, 2017)

2.5 Sustainable development

Sustainable development is just one of the ideas that first emerged at the United Nations Conference on Human and Environment in Stockholm, Kingdom of Sweden, in 1972 and remained a prominent idea in this field. Later in 1987, the World Commission on the Environment and Development Conference proposed updates to the idea to further develop and improve it in line with the changing world trends in sustainable development (Phra Phromkunaphorn (P.A. Payutto), 2013). Kua and Lee (2002) proposed an updated definition of sustainable development, whereby development should be able to meet current needs while also supporting the needs or necessities of future generations and improving the quality of life of people (Kua & Lee, 2002), which was similar to the United Nations definition (xxx = References). Sustainable development is, thus, a development that focuses on creating balance in three key dimensions, namely the economy, the society and the environment through which all dimensions of development are related and connected as follows:

1. Sustainable economic development is the development of a country's economic system to grow and progress with quality, stability, balance, and a fair distribution of wealth for the benefit of the majority of people in a long-term sustainable way.
2. Sustainable social development is the development of people and their society in association with the balanced development of the economy, natural resources, and the environment. This involves developing people, to have higher productivity, to be able to adapt to, and to be aware of changes that will lead to increased efficiency. Sustainable production supports the economic growth of a country, but in a conscience way of ensuring good behavior to support a way of life that does not destroy natural resources and the environment, while promoting a good quality of life that can be self-sufficient and sustainable.
3. Sustainable environment development is the use of natural resources in a way that the ecosystem can recover from their extraction while limiting emissions into the environment at a level that the ecosystem can absorb and destroy them. This is consistent with Preededilok's research that first presented a method in an educational context of educational institutions in Germany, as shown in Figure 3. Here, education is the foundation for sustainable development in all three sustainability dimensions, i.e., the economic, the social and the environment dimensions. Achieving sustainable development depends on the cooperation of both the federal government and the local government. In this regard, Germany put a national development plan into action with various supporting organizations, such as the Berlin Senate Administration for Education (Preededilok, 2012).

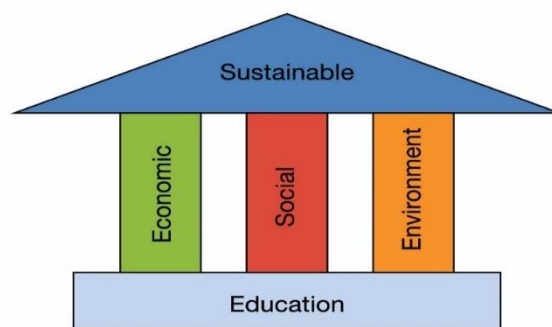


Figure 3. Sustainable Development Studies – Adopted by Mathuwan Srikong

2.6 Digital technology (DT)

Phuwan (2015) defined digital technology as a technology that is creative and necessary for a network without boundaries, just as Voratitipong et al. (2018) defined digital technology as technology that covers products, solutions, or programs that use computers of all kinds, electronic equipment, machine systems and devices that store and process information, and for use with social media, online games and applications, multimedia, productivity applications, cloud computing, and mobile devices, including communications as well as Information and Communication Technology (ICT), but especially digital (Voratitipong, Wannapiroon, & Nilsook, 2018). Digital technology, in addition to facilitating communication between people and people, and people and machines, can also create an opportunity for automatic communication between machines.

Therefore, the definition of digital technology may be summarized as discussed in this article as “Creative technology that covers all kinds of products, solutions, or applications that use computers. electronic equipment systems and devices that store and process data, social media, online games and applications, multimedia, productivity applications, cloud computing, and mobile devices, and communications.”

2.7 Digital technology wisdom management

There is an increasing trend for digital services and access to digital technology resources to be managed and delivered remotely online. This phenomenon is called cloud computing. The wisdom of this technology has become more important in the modern world. Cloud computing is a form of sharing the services of various computer resources with others, such as networks, servers, data loggers, software systems, and other services through a network that can be managed or adjusted according to users' needs. Cloud computing allows reducing the number of computer resources needed by users while, at the same time, providing quicker and easier access to such resources (Peter Mell & Grance, 2011).

2.8 Types of cloud computing

1. Private cloud is one created by a cloud computing system for internal use only and comprises a combination of IT resources under the possession or direct control of an organization. The system allocates or provide resources and computer services back to that organization in the form of various services.
2. Public cloud is one where services are allocated to the public through a provider. The provider's IT resources are similar to outsourced services but must be on-demand resources. Flexible access to the services is provided through self-registration through a wide network of links, in the form of a service that can monitor traffic from an IT resource that is certified. This service may have different security systems. Depending on the provider, this public cloud resource may or may not support integration with other IT resources within an organization.
3. Community cloud involves the creation of a cloud computing system by integrating IT resources from a specific group of members (communities) and allocating IT resources back to those members as a form of services.
4. Hybrid cloud is a cloud computing system created by collecting and integrating IT resources from a corporate private cloud with IT resources from a service provider. As a result, an enterprise's hybrid cloud will look the same as a private cloud (Mell & Grance, 2011).

2.9 Cloud computing models

Cloud computing service models are based on three main concepts in accordance with pay-per-use guidelines as follows (Witsut & Maurapong, 2010) :

1. **IaaS (Infrastructure as a Service)**. This is related to the hardware for servers, with for instance access to storage or storage and networking devices offered as a service. Infrastructure hardware is typically virtualized using a grid computing architecture, so the software for virtualized cluster systems and dynamic resource allocation is also integrated into IaaS. For example, Oracle coordinates with service providers, such as Amazon Web Services, who choose to deploy Oracle technology in either the private or public “cloud” to provide flexibility for organizations (corporate clouds, or in conjunction with other organizations).
2. **PaaS (Platform as a Service)**. This is a platform for developing and deploying applications that is offered as a service to developers who will then use that platform to create, manage, and deploy SaaS applications. It consists of databases, middleware, and development tools, all of which are offered as services through the Internet. Virtualized and clustered grid computing architectures are often the basis for this infrastructure software, such as the Oracle Platform for SaaS technology. Oracle is not a direct PaaS provider but provides the technology that enables PaaS and SaaS providers to build their own services.
3. **SaaS (Software as a Service)**. This is the opposite to the principle of on-premise software, which is the installation of software at work or on a user's computer, which is a form of providing software or applications on the Internet

network, enabling users to work online on the Internet network. These software services can be used without the need to install the software on the organization or the user's own computer (<https://www.oracle.com>, 2021).

There are five core components of cloud computing:

1. Clients. These are the users of the hardware or devices that are connected to the cloud.
2. Applications and Services. This is a software architecture that is run in real-time over the Internet to provide users with services without the need for installing and running applications on users' own computers. For example, Web Services was designed to support machine-to-machine interaction over a network.
3. Platform. This may be, for example, a platform to provide services for users. Here, the computer platform provides solutions for users from a platform without the users' worry about the purchase price, the complexity of the purchasing management, or their understanding of various layers of hardware and software layers.
4. Storage. This is an area for storing data through different types of services on the cloud.
5. Infrastructure. This is the basis of the service structure. To be sent to the computer structure by the general environment will be in the form of virtualization. (Montgomery, Marko, & Rando, 2021)

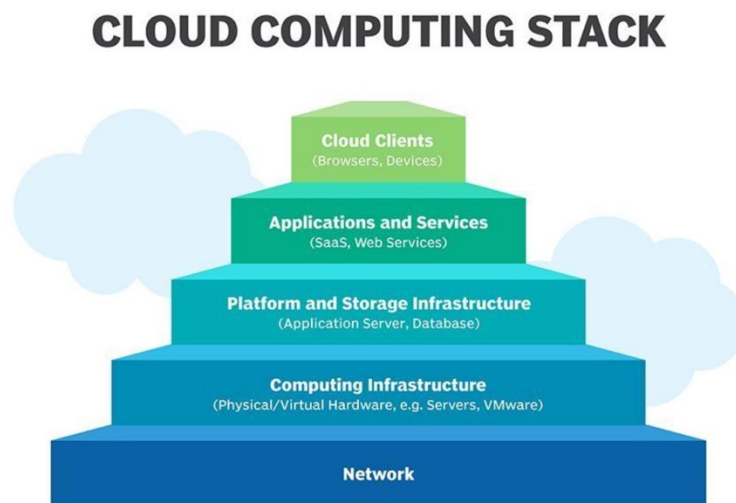


Figure 4. Core Elements of Cloud Computing (Montgomery et al., 2021)

The key characteristics of cloud computing are as follows:

1. It is fast working, can be adapted to users, has a low cost, and can work quickly without having to modify the system to the new resource technology structure.
2. Equipment and location agnostic, whereby the user may access the system through a web browser regardless of their device, such as a computer, mobile phone, or tablet, or location, both externally and at work, with access through the Internet from anywhere at any time.
3. It can perform multiple tasks, such as sharing resources at a low cost for users.
4. Reliable, with cloud computing systems typically offering IT support and business management services, thereby allowing companies to increase business productivity and to recover lost data.
5. Good safety, as cloud computing systems focus on increased security, which increases the ability and confidence users to share information.

2.10 Learning organizations

As well as the technology elements above, it is also important to consider people elements. In this regard, organizations may seek to develop their staff to manage and improve their digital knowledge and develop digital technology wisdom. Here, we can consider learning organizations (LOs). An LO is an organization that systematically manages digital intelligence in a continuous process of learning and development. This can lead to it becoming a quality organization capable of developing new innovations to e.g., increase work efficiency, allowing it to be recognized as a high-

performance organization (HPO). Marquardt (2002) proposed a learning organization management approach by dividing the learning organization system into five parts, as follows (Marquardt, 2002):

1. Organizational change, which means setting the direction for being an LO.
2. Knowledge management, which refers to the process of organizing intelligence and knowledge with the organization.
3. Technology for learning, which refers to the use of IT systems to facilitate intelligence management.
4. Empowering individuals, which means providing opportunities/empowering personnel to learn and grow to achieve good performance, including by solving problems, improving, and innovating, together with using a range of quality improvement tools.
5. Learning dynamics, which means providing/creating learning opportunities for personnel in a continuous improvement system, including the learning process from real practice to increase work efficiency and the use of techniques that can increase the speed of learning.

2.11 High-performance organizations

A high-performance organization (HPO) can be defined in several ways. De Waal (2007) studied a range of HPOs and compiled a number of definitions of HPOs and concluded that an HPO was an organization that had long-term financial success compared to other organizations and had the ability to adapt, together with the ability to respond quickly to the environment with the focus on long-term operations in an integrated manner (André A. de Waal, 2007). The management structure is harmonized by continual improvement and development of the core competencies of the organization, prioritizing the people in the organization as its true assets (Marc J. Epstein, 2006). Epstein (2004) reviewed the relevant literature and defined an HPO as a financially successful organization with high employee and customer satisfaction levels. HPOs also typically have a workforce with a high level of personal initiative, productivity and innovativeness, and the placement of performance measurement and reward systems and strengths, to recognize employee performance. Brokaw and Mullins (2007) described an HPO in the public sector as an organization capable of driving the organization toward a defined mission and vision that reflects its ability to manage change, empower staff, and identify and meet its needs to reach new destinations (Brokaw & Mullins, 2007). With a consistent vision of building and raising expectations, HPOs tend to focus on outcomes rather than activities (Kachintorn, 2015). An HPO, also known as an excellence organization, refers to an organization that excels at working, with a clear plan to cope with various conditions. HPOs may work in various fields, focusing on the mission to achieve their objectives efficiently, on time, and on getting good results, with excellent quality.

In summary, the definition of an HPO is an organization that gives importance to the people in the organization as assets, has a high level of personal initiative, and is capable of transforming itself into a sustainable innovation organization, with a focus on its mission to achieve its set objectives with high efficiency, on time, and to produce good work, and excellent quality.

3. results

The relationship between Digital Wisdom Management, High-Performance Organizations, and the Sufficiency Economy Philosophy can be viewed from several perspectives, with key connections as follows:

1. Digital Wisdom Management and High-Performance Organizations

Digital Wisdom Management enables organizations to efficiently collect and share essential data, knowledge, and experiences in digital formats, helping organizations make quicker decisions based on accurate information. Organizations with effective digital wisdom management systems are typically better equipped, to adapt to market changes and innovation, enhancing their efficiency in work processes and improving overall productivity. The use of digital technologies, such as Knowledge Management Systems (KMS), allows employees to easily access information and collaborate more effectively, leading to greater organizational performance.

2. High-Performance Organizations and Sufficiency Economy Philosophy

The Sufficiency Economy Philosophy emphasizes the efficient and balanced use of resources, avoiding waste. This principle aligns with the management approach of high-performance organizations, which focuses on optimizing resources without over-expansion or wasteful spending. Resource efficiency in the Sufficiency Economy Philosophy can be reflected in the context of building sustainable organizations that increase work efficiency and utilize resources effectively. Decision-making within the organizations that follow this philosophy is often considered in various dimensions economic, social, and environmental ensuring that growth and development are sustainable and stable in the long run.

3. Digital Wisdom Management and the Sufficiency Economy Philosophy

Digital Wisdom Management enables the effective sharing of knowledge and experience within an organization, aligning with the Sufficiency Economy Philosophy, which emphasizes the use of knowledge and data for sustainable development. Knowledge managed in digital systems helps organizations make decisions that are in line with the principles of the Sufficiency Economy, such as making resource decisions that are not excessive and managing risks responsibly. Collaboration and knowledge sharing within an organization with good digital wisdom management help create a shared understanding of using resources sustainably and meeting the needs of both the community and society.

4. Connecting the Three Elements (Digital Wisdom Management, High-Performance Organizations, Sufficiency Economy)

Organizations that manage knowledge digitally can use information and insights to make decisions that help develop a high-performance organization, without over-consuming resources. Organizations operating under the Sufficiency Economy philosophy can leverage digital wisdom management to enhance work processes in a way that is both efficient and sustainable while creating long-term value without over-reliance on external resources.

In summary, all three components—Digital Wisdom Management, High-Performance Organizations, and the Sufficiency Economy Philosophy—support one another to create organizations that perform efficiently and are sustainable, both economically, socially, and environmentally, in line with the principles of the Sufficiency Economy Philosophy, which emphasizes balanced and sustainable development.

4. Conclusion

The High-performance Organization Participating in Sustainable Development according to the Sufficiency Economy Philosophy (SEP) is an ecosystem based on intelligent knowledge management processes, starting from the importing of data to be classified as information through a process of analysis to become knowledge. This is the process of modifying and creating knowledge from tacit knowledge to explicit knowledge, ultimately leading to knowledge at the level of wisdom, which involves the ability to process and apply knowledge in practical situations and to solve problems or to develop it into something better. This is in line with the wisdom management process of His Majesty King Bhumibol Adulyadej, who espoused the Sufficiency Economy Philosophy (SEP) as a high priority so that Thai people can be truly ready to develop themselves and the nation for greater prosperity. Sustainability is based on three basic principles: moderation, rationality, and self-immunity, to protect from the impacts arising from internal and external changes. It is also an important foundation in the process of managing wisdom as well as using knowledge and virtue, as a basis to support and sustain life. It is important to have self-consciousness, wisdom, and perseverance, which can lead to true happiness. However, it relies on the cooperation of all sectors to ensure sustainable and continuous intelligence management for the benefit of all.

Cloud computing is a creative technology covering products, solutions or work programs that can be delivered for the use on all kinds of computers, electronic devices, systems and devices that store and process data, and for the use with social media, online games and applications, multimedia, productivity applications, cloud computing and mobile devices, including various communications. Therefore, it is suitable for managing digital intelligence. There are five core components in cloud technology: clients, applications & services, platform, storage, and infrastructure.

An organization that systematically manages digital wisdom can be recognized as a continuous learning and developing organization or learning organization (LO) and a quality organization capable of developing new innovations, such as sustainable solutions, to carry out its mission and core objectives efficiently, on time, and with good results and excellent quality. If it achieves all this, it can be regarded as a high-performance organization (HPO).

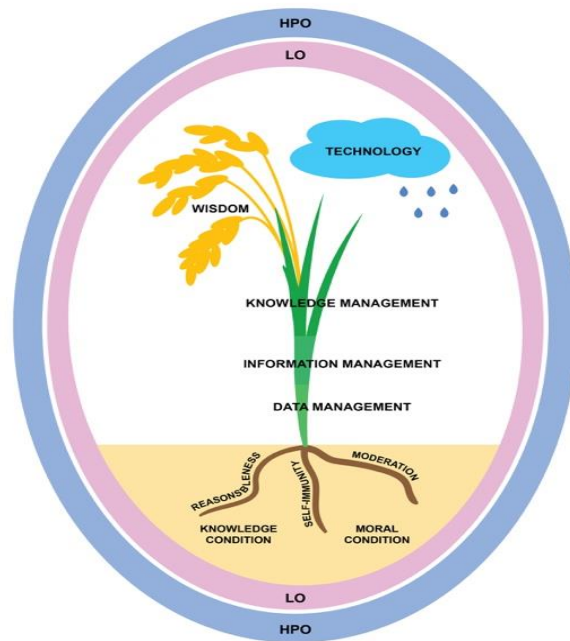


Figure 5. Digital Wisdom Management Ecosystem for Enhanced High-performance Organizations Participating in Sustainable Development according to Sufficiency Economy Philosophy

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