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Coursework 1

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Introduction

During classes there were talks about how organisations can manage their internal and external sources of knowledge to be able to act more effectively in a competitive market. However, when we normally think of knowledge in a general sense we may imagine someone who spent many years in university studying or someone who gained knowledge through years of work experience.

In work by Jarrar (Jarrar, 2012) a brief summary of knowledge in an organisational context is provided. He says that internal knowledge in a company can be the employees working at the organisation, the small details engrained in the workplace culture, knowledge may be the justification of many of the odd rules and procedures in a company policy book. Knowledge can also come external sources such as customer surveys or market analysis such as SWOT or PESTLE.

The main aim of this report will be discuss how knowledge can used in business setting to make everything more efficient and drive greater growth.

The concept of knowledge

Work done Hoppe (Hoppe, 2011) stratified the origin and hierarchy of knowledge into four tiers:

- 1- Wisdom
- 2- Knowledge
- 3- Information
- 4- Data

This hierarchy is often presented in the form of a pyramid where the journey to become more knowledgeable starts from the base and goes to the top, as shown in the following figure with a simple example.

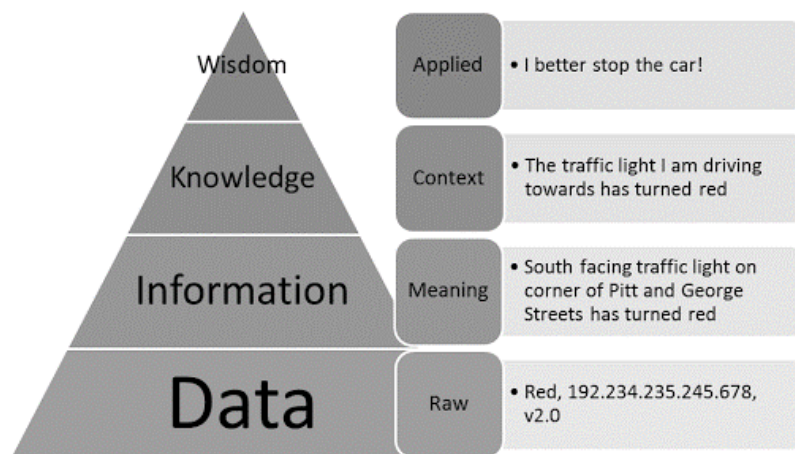


Figure 1 – example of a DIKW pyramid –

adapted (Murray E Jennex, 2013)

So, what does this mean in practice?

Data

Data refers to pure information with not further meaning attached to it. In the example shown, data is given as colour, geographical coordinates and direction. However, without a context to apply to this data it is largely random letters and numbers.

Information

The next strata on the DIKW pyramid is information. As given in work by Fricke (Fricke, 2019), information is created when data is connected to each other via contextual links.

An example of information being generated from data would be knowing where and in which direction the car is being driven and for example how far I am with respect to the traffic light – all of these bits of information that can sent for further processing.

At the information stage a person would be able to take two pieces of data and link them in cause and effect relation.

Knowledge

Up until now, the strata in the knowledge pyramid gave us factual assessments. However, when we reach the knowledge level begin to make use of the facts gathered to far for our needs.

Following on from our example from before, we can now analyse to see if the car is moving towards the traffic light and what colour the lights are, while we in the car are moving there.

The point that differentiates the knowledge strata from the ones before is that now we can start to make meaningful and useful conclusions out o the factual assessments.

Wisdom

The final strata on this pyramid is Wisdom, which is a bit harder to define. However, according to Yusof (Yusof, 2018) it can generally through of that wisdom is the stage at which the observer takes data, uses and analyses, it starts to ask questions regarding on what this should mean for him.

In the case demonstrated here of a car approaching a red light, wisdom would be to know that the driver should slow down to a complete stop before the red light and only cross the light when it turns green again.

This is the general pattern in a knowledge pyramid – starting off with simple bits of data that at first may seen completely random, linking those bits of data to provide a fuller picture, observing that full picture and make a decisions based on it.

Knowledge types: individual and organisational

Having gone through a brief example of how knowledge is created lets now see now have a look at knowledge applied to a business or workplace setting.

According to Kimmerle (Kimmerle, 2010) knowledge can be created from a variety of sources, examples of such source may include good habits that developed over years as a particular method got a job done better, it can be extracted from hand written notes that an employee makes during the course of a workday, knowledge may be extrapolated from customer surveys or face to face conversations during normal operations, etc.

Some of the these knowledge sources will be the individual and others organisational. We will not look into these two knowledge sources a bit more closely.

Individual knowledge

Within the confines of a business individual knowledge can be considered as that knowledge that is available to an employee – but not the organisation.

Referring back to the earlier example, an employee may develop certain habits over years of doing the same job and may find that these habits make his days easier. However, unless the employee documents and shares this knowledge with the rest of team, it will be available only to him and therefore it will be classed as individual knowledge.

In work done by Pemberton (Pemberton, 2002) it discussed that sometimes a habit, or a bit of knowledge, that may be beneficial to one person may not be as beneficial to another because he may lack the ability to make good use of that knowledge. This becomes important when a business tries to turn individual knowledge into organisational knowledge.

Organisational knowledge

Contrary to individual knowledge, organisational knowledge are the bits of knowledge that are available to the entire organisation.

Referring back to the earlier examples, organisational knowledge would be the results of a customer survey after it has been completed and sorted. All the employees would likely be informed of what their customers liked and how to approach them accordingly. Because the information is now available to the whole organisation and openly shared between all employees, it can now be classified as organisational knowledge.

In a practical work environment

It is easy to theoretically define the limits of individual and organisational knowledge. However, in real dynamic work environment these two types of knowledge interact with each other and evolve from one to another.

For example, if an employee has knowledge that is particularly helpful in getting his work done more efficiently or quickly it is likely that this would be noticed by his managers and peers. Assuming that businesses aim would be to be more successful, others would start to conform to the employee's knowledge and in this way, almost naturally, over time his knowledge would become known across the company and would then be considered to be part of the organisational knowledge database.

It may also happen that the organisational knowledge that was just generated might be applied by a second employee in a slightly different setting. The second employee might observe some new data from his daily tasks and adapt the original knowledge to be better suited to the new data. This would in turn turn the organisational knowledge into individual knowledge.

If the second employee's new found knowledge is good, it would be in a similar way as originally, turned into organisational knowledge again.

Knowledge assets

Gathering from work done by Carlucci (Carlucci, 2006), knowledge assets can be described as all the resources, such as books, journals, records, handbooks, employee experience, etc, available to an organisation that can be used to generate new knowledge.

The most common and most important knowledge asset in a business tends to be the employees themselves. Employees' knowledge can be stored and shared in many ways such as training guides for new employees, during team work where they may share their views on a matter, from training courses the employees attend, etc.

As for storage of all that knowledge, it can spread out through the organisation or it may be concentrated on a select few high level senior employees on whom the junior employees rely.

As for the way this knowledge is it can be either structured or unstructured. For example, a well organised guide book with a list of steps to follow and the justification for each step, would be considered a high structured knowledge source. In contrast, knowledge gained from repeat experiences, which can also be referred to habits, tend to be much more unstructured. The person in charge of a task may know what steps to follow but if he tries to explain it to his managers he encounters difficulties.

Because of these qualities in the type and sources of knowledge, some knowledge is harder to manage than others.

Potential knowledge assets

Knowledge assets are generally present in every part of an organisation, however sometimes people aren't fully aware of the value of these dispersed knowledge assets. These types of knowledge assets are categorized as potential knowledge.

An example of potential knowledge may be a piece of software that helps produce nice images to use in marketing campaigns. It may be a very useful asset that lets an employee get things done much more quickly than drawing everything by hand. However, the management and his peers may be unaware of the full capabilities of this software and such as may be unaware of the potential value that it holds.

If a knowledge asset cannot be observed by the organisation to be directly adding value to their business, it will be considered a potential knowledge asset. This is because it has the capacity to offer much more to the organisation but is not being fully and properly utilized.

Actual knowledge assets

In contrast with potential knowledge, actual knowledge are those knowledge assets that everyone within the company is aware of and the most value is extracted from. Also in contrast with potential knowledge is visibility of actual knowledge, it will be something that senior managers to new recruits become aware of.

An example of an actual knowledge may be an employee who attended many training courses on a particular matter and has since added a lot of value to the company. That employee will be considered as an actual knowledge asset, individual knowledge perhaps, but none the less everyone is aware of how useful his skills are and value him for that.

It is evident from these examples, that actual knowledge is more valuable to an organisation. Because if no one in the team knows about a bit of knowledge and doesn't use it, the end result will be identical to as if the knowledge resource didn't exist.

Potential knowledge has the potential to add a lot of value to an organisation, but unless it gets recognised in time and applied appropriately it may become a lost opportunity.

Maintaining knowledge assets

So far we have discussed how knowledge is created, the types of knowledge and how one can turn into another and vice versa. But one key consideration that's missing is how to maintain knowledge usable within an organisation over a long period of time.

For example, let's say management found that a piece of software can greatly improve employees' efficiency with administrative tasks. The new knowledge asset is implemented at an organisational level via employee training. But after some time, those administrative tasks become less frequent and employees slowly start to forget the key details to use the software appropriately.

The example above is an example of organisational knowledge being degraded over time. If these administrative tasks are not required in the future, then the degradation of knowledge will not have any significant impact. According to Matthews (Matthews, 2006), older knowledge is often discarded or updated as needed with changes in technology or other internal or external factors. But if they were needed ever in the future, the organisation would have a crisis on its hands.

In work done by Bontis (Bontis, 2010), it is recommended that older knowledge be assessed in its usability at regular intervals, as thought of as reasonable by the management, and when a knowledge asset is identified as having potential use in the future, the employees made to undergo re-training to retain that particular knowledge.

If important skills are lost due to lack of maintenance (via training or otherwise), it can lead to issues when those skills are required on a project in the future.

Intellectual Property

According to Sweet (Sweet, 2015), intellectual property rights are laws that are in place to protect an individual or an organisations ideas from being copied or used without authorisation by third party actors. With the main justification for such laws being that they promote innovation in the market by protecting the authors work and thus allowing the author to receive due remuneration and in turn incentivizing further innovation in the market which on the long run is hoped to generate sustained economic growth and prosperity.

The most common form of intellectual property are copy right, trademarks and patents. The existence of these documents and enforcement of the intellectual property right laws, allows an author who believes his ideas or work is being used without him receiving due remuneration, can take his claim to court and if successful force the other part to pay him compensation for the lost revenue.

Studies conducted by Rapp (Rapp, 2010) have shown that over the last two centuries when intellectual property right laws being to be enforced, there has been an accompanying increase in the amount of new devices, ideas, medication, art, in short things that innovate and add value to an economy. And when this incentive for innovation in the form of intellectual property rights were taken away it often lead to slow technological degradation.

Knowledge life cycle - Using knowledge in a commercial setting

The principal goal of knowledge management is to allow the end user to better, quicker and more efficient use of the knowledge assets at their disposal. According to Maier (Maier, 2011) the life cycle of knowledge is defined in four distinct stages:

- 5- Creation
- 6- Storage
- 7- Application and
- 8- Integration

Actively managing these knowledge life cycles are becoming more and more important in businesses as markets now days are predominantly based on knowledge trading. For example a consultancy service working for a business trying get entry into a new market, is essentially selling that business the knowledge assets needed to engage with the customers of that new market. A study by Kane (Kane, 2014) found that these sort of businesses have seen tremendous growth over the past decades since the Chinese and Indian markets became more lucrative after the 2008 recession.

Creation

This is the first step of the cycle where data goes through the knowledge pyramid and gets transformed into useful knowledge.

As discussed in earlier sections, in a business setting it can be created via training courses, meetings, brain storming sessions, etc, and once this knowledge is created it needs to be shared and stored across the organisation, turn it into organisational knowledge, for it to reach its full potential.

Storage

After knowledge has been created it has to be stored appropriately so it may be accessed when needed by other members of the organisation. It is recommended that critical or particularly helpful knowledge be given additional effort to store them in a structured and easily readable format, for example instruction guides and procedures.

The task of storing these new bits of knowledge is made easier by knowledge management or database management software that are available and have become increasingly more accessible to less tech savvy people over the past years.

A portion of the knowledge will also become stored in the memory and experiences of the employees who use the knowledge and this combined with a structured and easily accessible storage format would make it easier for any employee in the future to make use of the knowledge asset or alternatively alleviate retraining requirements.

An additional benefit of having a good knowledge management system in place is that when before new knowledge assets are sought, a quick check can be made on the knowledge database to verify that resources would not be wasted on re-reproducing an asset the organisation already has.

Application

At this stage the management or staff directly responsible for the creation of the knowledge assets put it to use and show its benefits to their peers. Depending on the level of care that was provided in the storage stage, it may speed up or slow down the application stage.

After an appropriate storage solution has been achieved the next step becomes to make the employees who would benefit from it, aware of it. In an organisation many knowledge assets may be created, this may be even more accentuated in a large organisation, therefore employees might not be aware of every new development happening with regards to knowledge generation. Because of this it is necessary to have a system that notifies employees when a knowledge asset that may benefit them becomes available as this will speed up the application stage.

Integration

In the final step of this cycle, knowledge assets which have been created and have been tested and applied in the organisation, and that have been successful in increasing productivity or in any other form add value, are made part of the norm.

If a knowledge asset is found to add value it becomes necessary to care for it so as to not degrade that particular asset with time. Work done by Berggren (Berggren, 2012) explored options on how to achieve this and concluded that having a best practices handbook and updating it with new knowledge assets as they become available is a cost effective way of integrating new knowledge in the workflow.

The integration process can be further aided by promoting rewards for the employees who actively adopt the new knowledge assets in their workflows, or alternatively make it compulsory for employees to get trained on how to use the new knowledge assets.

How do knowledge assets contribute to an organisation?

As discussed so far, proper handling of beneficial knowledge assets can make an organisation better by giving its employees the information needed to do their tasks better.

The key benefit to maintaining and incentivising a good knowledge management culture is that it allows knowledge transfer and sharing across the organisation much more efficient.

It has been reported by magazines such as CodeMag.com (White, 2010) that in many niche industries there is a substantial crisis in the making because in these areas modern knowledge management systems were not always properly implemented. The work sites examples in very high-end software engineering where engineers wrote the code that runs most of today's banking systems many decades ago but did not document their coding very well. It is stated that this is not the engineers fault as knowledge management was a mere afterthought back in their time. As a result, when there are issues that need addressing on a fundamental level, banks are often forced to have to pay large sums of money to get a qualified software engineer to fix the issue – if they can find one available.

Other than knowledge transfer in a cross generational timeframe, there is also the issue of training new recruits. As discussed before, having a well structured knowledge resources that are widely available within the organisation can allow the newcomers to get trained much more effectively.

The main benefit may be summarised as sustained long term and efficient employee training.

An example of applied knowledge management at my workplace

A few years ago when I lived in Lisbon, Portugal, I ran a small wholesale business. It was family run business managed by my wife and myself, neither of us had any formal training in business training and the concepts of proper knowledge management was unheard of.

We kept record of our monthly sales on a handwritten notebook and when getting new goods to sell we would look up on the notebook which items sold best over the past few months and make our decision based on that.

The basic things were simple, such coats sell well in the winter and t-shirts sell best in the summer. However, more hidden and valuable knowledge was hidden in the monthly notebook. Information such as which suppliers provided the best prices for which items and how the suppliers stocks and prices varied around the year.

Because of the nature of handwritten notes, the knowledge that we would gather year on year would be very unstructured and the vast amount of data – which was mainly numbers linked to names – was almost impossible to remember by memory.

And as a result we failed to take full advantage of the knowledge assets available to us.

It should be noted this is one of the simpler examples, there were many other areas where I made mistakes.

Looking back my performance with current knowledge

If I had known the value that knowledge of software such as excel would have added to our business or to develop a habit of keeping all that data safe and well preserved as if it was real money, the business could have been much more successful.

With proper knowledge of when which supplier would have the correct stock at the lowest prices, I could have saved a lot of time in procuring the right goods for my business.

Given my knowledge of conducting PSTLE analysis I perhaps could have also made better decisions when the 2008 recession struck.

Reflection and conclusion

In my time studying this module and conducting research for this report I learned a significant and useful amount of how good and proper knowledge management can add tremendous value to an organisation.

I learned that through proper storage, application and integration an organisation can reduce the cost of training new employees and retaining critical but often used knowledge assets.

And in reflecting upon my past experiences, it is clear that having the knowledge of the value that knowledge management can add I may have sustained my business for longer.

Bibliography

Berggren, C. A. B. L. B. M. H. a. J. S., 2012. *Knowledge integration and innovation: Critical challenges facing international technology-based firms*. Oxford: Oxford University Press.

Bontis, N., 2010. Assessing knowledge assets: a review of the models used to measure intellectual capital. *International Journal of Management Reviews*, 13(4), pp. 60-72.

Carlucci, D. G. S., 2006. Knowledge asset value spiral: linking knowledge assets to company's performance. *The Journal of Corporate Transformation Knowledge and Process Management*, 13(1), pp. 35-46.

Frickee, M., 2019. The Knowledge Pyramid: the Data, Information, Knowledge and Wisdom Hierarchy. *Journal of Knowledge Management in Organizations*, 48(2), pp. 65-78.

Hoppe, J., R. S. A. N. C. W., 2011. Wisdom - the blurry top of human cognition in the DIKW-model?. *Proceedings of the 7th conference of the European Society for Fuzzy Logic and Technology*, pp. 584-591.

Jarrar, Y. F., 2012. Knowledge management: learning for organisational experience. *Managerial Auditing Journal*, 14(1), pp. 54-65.

Kane, G. C., J. J. A. M., 2014. Emergent Life Cycle: The Tension Between Knowledge Change and Knowledge Retention in Open Online Coproduction Communities. *Journal of Management Science*, 60(12), pp. 54-68.

Kimmerle, J. U. C. C. H., 2010. The interplay between individual and collective knowledge: technologies for organisational learning and knowledge building. *Knowledge Management Research and Practice*, 8(1), pp. 33-45.

Maier, R. T. H., 2011. *Knowledge Management Systems*. Berlin: IGI Global.

Matthews, K., H. H., 2006. *Maintaining Knowledge Assets*. London: Springer.

Murray E Jennex, s. E. B., 2013. A Revised Knowledge Pyramid. *International Journal of Knowledge Management*, 9(3), pp. 69-82.

Pemberton, J. D., G. H. S., 2002. The Importance of Individual Knowledge in Developing the Knowledge-Centric Organisation. In: *Knowledge Management in the SocioTechnical World*. London: Springer, pp. 77-89.

Rapp, R. R. R., 2010. Benefits and costs of intellectual property protection in developing countries. *Journal of world trade*.

Sweet, C. M. D. S. E. M., 2015. Do Stronger Intellectual Property Rights Increase Innovation?. *Journal of World Development*, 66(1), pp. 665-677.

White, S. K., 2010. <https://www.codemag.com/article/3243575/9-legacy-programming-skills-still-in-demand.html+&cd=15&hl=en&ct=clnk&gl=uk>. [Online]
[Accessed 2019].

Yusof, W. S. E. Y. W., O. Z. Z. A., 2018. DIKW Application on Knowledge Based Framework with. *International journal of Academic Research in Business and Social Sciences*, 8(6), p. 1110-1120.

