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7. Personal Knowledge Mastery

*Fake news. PR hype. Content marketing. Advertorials. Click bait.
Propaganda. Doublespeak. Newspeak. Yellow journalism. Shock jocks.
Post-truth. Spam. Phishing.*

Digital information comes from all directions, and much of it from dubious sources or with the intent to misinform. Today, it is just too easy to create, replicate, and share digital information. As a result, we are enveloped in it. This is why ad blockers on browsers have become so popular. It's why everyone needs spam filters for their email. Filter failure is not acceptable in the digital workplace. But neither is living in an information bubble.

The challenge for any organization dependent on knowledge is to ensure that implicit knowledge from those closest to customers and the external world informs the explicit knowledge that is shared throughout the company. Knowledge flow has to continuously become knowledge stock. Individuals practising personal knowledge mastery have to be an intrinsic part of organizational knowledge management. Knowledge comes from and through an organization's people. It is not some external material distributed through the chain of command.

The explicit knowledge officially sanctioned by the organization is an emergent property of the implicit knowledge that is shared between employees. Without an underlying implicit knowledge flow, the explicit information bears no relationship to the lived reality of those in the organization. The chats, questions, and conversations between employees can be collected and refined to inform organizational search engines. Self-published works, like blogs, can contribute to official documents like white papers and brochures. Implicit and explicit information must be connected or the organizational knowledge base becomes a wasteland of useless documents. Is this your intranet?

Ensuring that people can find the right information leads to sharing better (or the best) information. This in turn helps everyone in the organization take informed action. Trusted relationships that enable open knowledge-sharing result in the entire organization making better decisions.

What is PKM?

Personal knowledge mastery is a set of processes, individually constructed, to help each of us make sense of our world and work more effectively. But what we loosely call knowledge, using terms like knowledge-sharing or knowledge capture, is just an approximation. We are not very good at articulating our knowledge, says knowledge management expert Dave Snowden: “*We always know more than we can say, and we will always say more than we can write down.*”

Becoming knowledgeable can be thought of as bits of knowledge partially shared and experienced over time. It is laborious, hence the reason masters through the ages could only have a limited number of apprentices. But when writing, and later books, came along, we had a new technology that could more widely distribute information created by the wise, and the not so wise. Whether being mentored by a master or reading a book, knowledge does not actually get transferred, but shared observations and information can be helpful to those who have a desire to learn.

Merely being well-read is not enough to be knowledgeable, as possibly first noted by Socrates. Plato wrote in *Phaedrus* that Socrates felt the written language would result in “*men filled, not with wisdom, but with the conceit of wisdom, who will be a burden to their fellows*”. Socrates saw a core truth in learning from artifacts like books. We cannot become complacent with knowledge and just store it away. It has a shelf life and needs to be used, tested, and experienced. It should be shared amongst people who understand that they are only seeing a fragment of each others’ knowledge. Because it is so difficult to represent our knowledge to others, we have to make every effort to continuously share it. Once is not enough, as most parents know. Knowledge shared in flows over time can help us create better mental pictures than a single piece of knowledge stock, like a book.

Capturing knowledge, as crudely as we do, is just a first step. Personal Knowledge Mastery is a framework for individuals to take control of their professional development through a continuous process of seeking, sensing-making, and sharing.

Seeking is finding things out and keeping up to date. Building a network of colleagues is helpful in this regard. It not only allows us to 'pull' information, but also have it 'pushed' to us by trusted sources. Good curators are valued members of knowledge networks.

Sensing is how we personalize information and use it. Sensing includes reflection and putting into practice what we have learned. Often it requires experimentation, as we learn best by doing.

Sharing includes exchanging resources, ideas, and experiences with our networks as well as collaborating with our colleagues.

The multiple pieces of information that we capture and share can increase the frequency of serendipitous connections, especially across organizations and disciplines where real innovation happens. As Steven Johnson, author of *Where Good Ideas Come From* says that, "*chance favors the connected mind*".

PKM may be an individual activity but it is social as well. It is the process by which we can connect what we learn outside the organization with what need to do inside. Research shows that work teams that need to share complex knowledge need tighter social bonds. Work teams often share a unique language or vocabulary. However, they can become myopic and may lack a diversity of opinions. Social networks, on the other hand, encourage diversity and can sow the seeds of innovation. But it is almost impossible to get work done in social networks due to their lack of structure. PKM is the active process of connecting the innovative ideas that can arise in our social networks with the deadline-driven work inside organizations.

In addition to seeking, sensing and sharing, we need to become adept at filtering information as well as discerning when and with whom to share. Like any skill, these require practice and feedback. Much of this can be provided in communities of practice, a half-way space between work teams and social networks, where trusted relationships can form that enable people to share more openly.

Connecting social networks, communities of practice and work teams, is an important framework for integrating learning and working in the network era. We seek new ideas from our social networks and then filter them through more focused

conversations with our communities of practice, where we have trusted relationships. We make sense of these embryonic ideas by doing new things, either ourselves, or with our work teams. We later share our creations, first with our teams and perhaps later with our communities of practice or even our networks. We use our understanding of our communities and networks to discern with whom and when to share our knowledge.

Narrating one's work does not get knowledge transferred, but it provides a better medium to gain more understanding. Narration is a concept that is very easy to understand, but not quite so easy to do. Most people are too busy managing in their information age workplaces and have little spare time to try to learn how to work in the network age. The most important step in learning a new skill is the first one. This same step has to be repeated many times before it becomes a habit. I have learned that the first step of starting to narrate your work, as part of personal knowledge mastery, has to be as simple as possible.

For example, being able to share is usually not a prime reason why people start using web information capture tools like social bookmarks but it becomes more important over time. Coupled with feed readers (e.g. feedly.com) aggregation makes information flows much easier to deal with. Then you have to connect with people.

So how do you get started on a social media platform like Twitter? I suggest beginning with an aim in mind, such as professional development or staying current in a specific field. The search function can help find people who post about a specific topics. To start, you should follow between 20 and 30 interesting people. Once set up, beginners should dip into their stream once or twice a day and read through any posts of interest. Over time, as they follow links, they may add or delete feeds. Within a week or two, anyone should be able to sense some patterns and then modify their streams to provide more signal and less noise.

Sometimes we get all caught up in the latest social media tools. Getting started working out loud is not complicated and should not involve a steep learning curve on a complicated system. It is best to start with simple tools and frameworks.

The mainstream application of knowledge management and learning management over the past few decades is mostly wrong; we over-managed information, knowledge and learning because it was easy. Our organizations remain enamoured with the next wave of enterprise software systems. But the ubiquity of information outside the organization is showing the weakness of centralized enterprise systems. As organizations begin to understand the Web, the principle of small pieces loosely joined is permeating some thick industrial age walls. More workers have their own sources of information and knowledge, often on mobile devices, but they usually lack the means or internal support to connect their knowledge with others to actually get work done. Supporting PKM, especially internal sharing, can help information flow more freely.

Personal knowledge mastery frameworks help knowledge workers capture and make sense of their knowledge. Simple standards can facilitate this sharing. Knowledge bases and traditional KM systems should focus on essential information, and what is necessary for inexperienced workers. Experienced workers should not be constrained by too much structure, but be given the flexibility to contribute how and where they think best helps the organization.

We know that formal instruction accounts for less than 10% of workplace learning. The same rule of thumb should apply to knowledge management. Capture and codify the 10% that is essential, especially for new employees. Now use the same principle to get work done. Structure the essential 10% and leave the rest unstructured, but networked, so that workers can group as needed to get work done. Many organizations are too slow and hierarchical to be useful for knowledge-sharing in the network era. Organizations structured around looser hierarchies and stronger knowledge networks are much more effective for increasingly complex work.

Why PKM?

Most of us work with others. We cannot do everything alone. We need advice and guidance on complex matters. This requires a knowledge network. We most readily take advice from people we trust. By building a network and getting to know people with expertise we can learn and have access to knowledge beyond ours. Successful people have diverse, but select professional social networks.

How do I master PKM?

Start with the three core perspectives of PKM: **seek > sense > share**.

Continuously seek out people and knowledge to improve the breadth and diversity of your knowledge networks.

Experiment on a regular basis to try out new practices in order to learn by doing.

Make sense of your life and work by making your thoughts explicit (sense-making).

Review these from time to time.

Seek out communities of peers that will enable you to improve your professional practices.

Share your learning with discretion at work, in your communities of practice, and with your social networks.

Knowledge Catalysts

“We live in a society absolutely dependent on science and technology and yet have cleverly arranged things so that almost no one understands science and technology. That’s a clear prescription for disaster”.

—Carl Sagan

When people are presented with a problem the first urge is to resolve it. If the computer does not work, they want it fixed. Then they can move on to what they were trying to do in the first place. But quite often the source of the problem did not go away. People also need to understand how the problem was created. This requires

time and effort to learn. But when the problem is gone, there is little incentive to learn about the implications and complexities that created the problem.

Many people live in this digital network society with computers at our fingertips but little idea of how they work. This is why Facebook and Google are so popular. Not only are they free but they require no understanding of how they work. Indeed, they hide how they work from even the most inquiring minds, while mapping the relationships and behaviours of +2 billion people. These platforms are just too convenient.

We haven't really got appropriate historical analogies for the tech giants," explains Dr Powles. Their powers, she continues, extend "far beyond" the likes of the East India Company and monopolies of old, such as Standard Oil ... "What is most striking is the sense of resignation, the impotence of regulation, the lack of options, the public apathy," says Dr Powles. "What an extraordinary situation for an entity that has power over information – there is no greater power really. ¹

Most people are happy with their technology until it doesn't work for them. Then they quit, complain, or try to solve the problem. The latter takes time. It's what few of us do. It hurts to understand that with each level of understanding we actually understand less. If we learn a bit we may become little exemplars of the *Dunning-Kruger* effect, where people overestimate their competence in fields they know little about. If we continue to learn we can get more frustrated and perhaps cynical. It's the curse of our digital age and the surveillance economy.

It's easy to say that people have to take responsibility for their learning, but not everyone had the luxury of learning how to program. But computers and networks control our lives today. While all individuals have a responsibility to learn, those who know more have a greater responsibility to share. This is part of the personal knowledge mastery **seek** > **sense** > **share** model. If you are an expert, you are not helping your human network get any smarter if you are not sharing. Experts have to

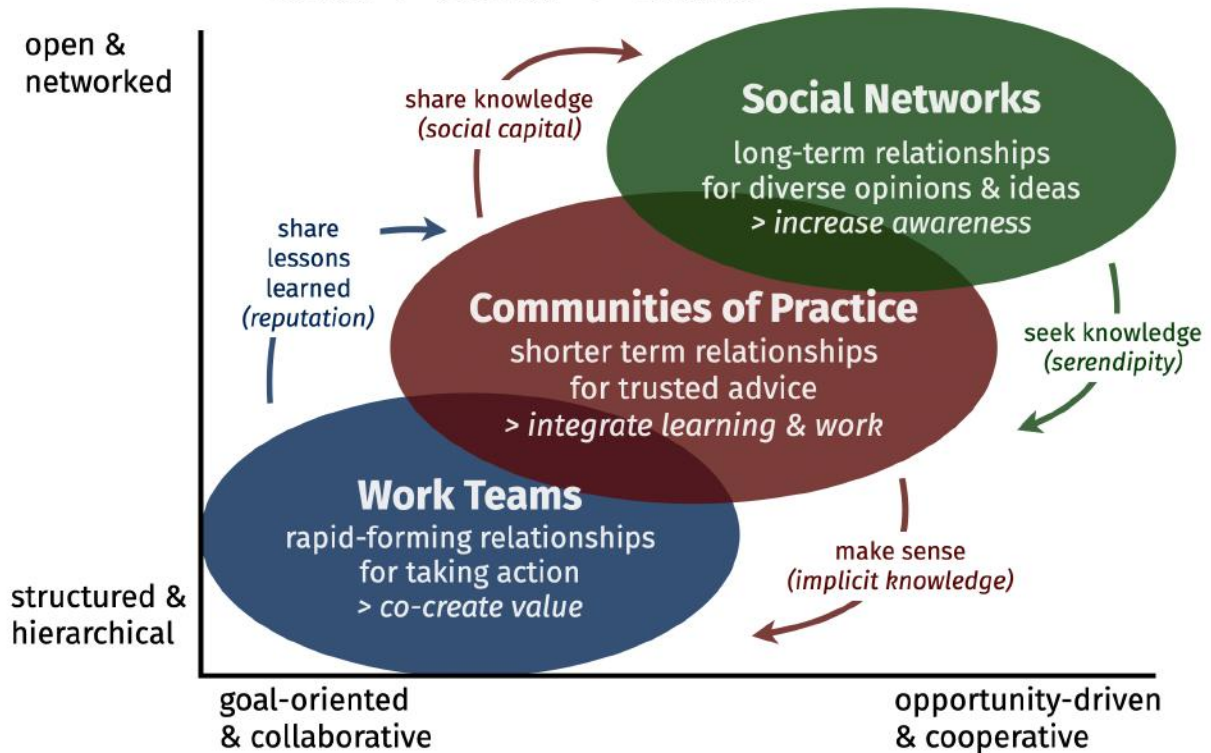
¹ <http://www.bbc.com/news/business-39947942>

become knowledge catalysts. PKM helps connectors and experts become knowledge catalysts.

Being a knowledge catalyst means taking the time to add value to your knowledge. One way is to simplify what you know. Make your work human understandable. Speak in non-geek terms. If experts do not do this they will become surrounded by less informed people over time. Our global human networks will get dumber. These networks of people might even vote for bombastic populists or support policies that will make all of us poorer or less free to pursue our goals.

The Network Learning Model

seek > sense > share



Narrating Work & Learning

Networked learning is changing the training world. Many learners now own their knowledge-sharing networks. What does it mean to own a knowledge-sharing network? Today, content capture and creation tools let people tell their own stories and weave these together to share in their networks. It's called narrating your work

and has been done by coders and programmers for decades as they learn out loud. What started as forums and wikis quickly evolved into more robust networks and communities. Programmers who share their work process and solutions in public are building a resource for other programmers looking to do the same type of work. This makes the whole programming environment smarter. Organizations can do the same.

The public narration of what we do, attempt and learn on a daily basis not only helps us help others, but also puts us in a position to get help from peers. When your co-workers know what you're working on and what problems you run into, they can offer their experience. Still, these days, few people work in the same room as all their co-workers, so they rely on the Internet to offer them a common space to find and offer work narration.

Narration helps everyone get smarter. If you're confused about what to write, post about what you're working on every day, who you're meeting with, the research you're doing, the articles you find relevant, lessons you learned, and mistakes you made. These insights are valuable to people trying to train others how to do similar things. Create short posts that are easy-to-skim, making this kind of narration practical for both the author and the audience.

Narration is turning one's tacit knowledge — what you know — into explicit knowledge — what you can share. Developing good narration skills takes time and practice. Just adding finished reports to a knowledge base does not help others understand how that report was developed. This is where online activity streams and micro-blogging, like Yammer, have helped organizational learning. People can see the flow of work in small bits of conversation that, over time, become patterns. Narration of work is the first step in integrating learning into the workflow.

Online learning can be looked at as either stock or flow. Stock is organized for reference and does not change frequently. Courses are stock. Flow is timely and engaging. Narration of work in social networks is flow. With access to more learning flow, via social technologies, highly networked workers can have a much broader, deeper and richer learning experience than any workplace learning professional could ever design in advance.

A worker today can ask questions to a worldwide support network on a platform like Twitter and get an answer in minutes. Deeper questions can be addressed on a service like Quora, where responses get voted on by the community. Many experts worldwide are now narrating their work and making it freely available on the Internet. A new form of distributed cognitive apprenticeship is now available, and knowledge workers are taking advantage of this.

Training departments should put a greater emphasis on learning flow. Stories are an excellent example of learning flow. For millennia, we have learned through stories. This is how gamers and hackers, the digital pioneers, have learned how to learn without curriculum, courses or instructors:

- They share their stories.
- They know there is no user manual.
- They embrace the flow.

Ensuring knowledge flow entails the capture and creation of digital artifacts. Try to share as much as possible. Make sharing the default action by offering entrance into social networks to everyone. [e.g. feed readers, social bookmarks, blogs, photos, videos, social networks, activity streams]. Keep everything open and transparent [do not create walled gardens] as the key to useful information is being able to find it. Support easy-to-make connections; between people, and with digital resources.

Nodes in a Network

All fields of knowledge are expanding and artificial boundaries between disciplines are disintegrating. Our education systems need to drop the whole notion of subjects and content mastery and move to process-oriented learning. The subject does not matter, it's merely grist for the cognitive mill.

If we want to help people deal with complex problems then they need to learn and practice in these. It starts in school. Subject-based curriculum sucks the complexity out of schooling, as do age-based classes. They promote conformity and teaching to the test.

While the industrial economy was based on finite resources, a creative economy is not. There is no limit to human creativity. We have to make a new social contract, not based on jobs, but enabling a learner's mindset for life.

Networks are made up of nodes (people) and relationships. Curiosity and learning can create new connections between people and ideas. If we put our efforts into promoting learning (not schooling) for life we just might be able to create better ways of organizing our society. Constantly learning nodes can make for more resilient knowledge networks. This is the focus of personal knowledge mastery.

The way out of our collective messes is to make our social networks, and our society, smarter. Leadership today is helping our networks make better decisions.

PKM and Competitive Intelligence

Competitive Intelligence (CI) is a combination of collecting, collating, analyzing and disseminating intelligence about the market and the business environment to make strategic decisions.

Several years ago I advised a client on how to develop a CI process:

Start by asking questions internally and seeing what kind of answers you get. Use your existing social media tools to do this.

As a distributed team, each person can be responsible for a specific information source that is monitored regularly. This should be narrated and posted for all to see and comment.

Ask a weekly question and see who can get some information that may be able to answer part or all of it.

In the feedback to these questions people may ask you to re-frame the questions. Continue to learn and refine this process for your unique context. Better questions will make for better Competitive Intelligence. Keep this process visible.

You may not need to hire anyone else to collate the data, but if you do, keep your team (who have industry knowledge) involved.

Don't just hand Competitive Intelligence over to a junior staff member. Competitive Intelligence should be part of the conversational flow in the company. Marketing, sales, developers and management should be actively involved.

The process of asking questions, seeing if there are answers and in turn asking questions about the questions can hone the team's ability to gather competitive intelligence.

If you decide to purchase access to information sources, only buy one at a time. Use that source as much as you can (squeeze it dry) until you realize you should eliminate it or augment it with another purchased source.

Competitive Intelligence, like knowledge management, needs people to be continuously involved and engaged — it is really just a focused type of knowledge management. Therefore, people with good personal knowledge management skills should also be better contributors to Competitive Intelligence.

Innovation and Insights

Competitive intelligence can help to inform innovation processes. Scott Anthony, in researching his book, *The Little Black Book of Innovation* (2011), found four skills that most successful innovators exhibit.

Questioning — Asking probing questions that impose or remove constraints.

Example: What if we were legally prohibited from selling to our current customer?

Networking — Interacting with people from different backgrounds who provide access to new ways of thinking.

Observing — Watching the world around them for surprising stimuli.

Experimenting — Consciously complicating their lives by trying new things or going to new places.

One way to practice these skills would be to promote personal knowledge mastery in the workplace. The Seek > Sense > Share framework aligns with these innovation skills. Seeking includes observation through effective filters and diverse sources of information. Sense-making starts with questioning our observations and includes

experimenting, or probing (Probe-Sense-Respond). Sharing through our networks helps to develop better feedback loops. In an organization where everyone is practising PKM, the chances for more connections increases.

Innovation is not so much about having ideas, as making more and better connections.

Innovation is inextricably linked to both networks and learning. We can't be innovative unless we integrate learning into our work. It sounds easy, but it's a major cultural change. Why? Because it questions our basic Taylorist assumptions about work, such as:

- A job can be described as a series of competencies that can be filled by the best qualified person [as described in detail in the previous section on JOB is a four-letter word]
- Somebody in a classroom, separate from the work environment, can teach you all you need to know.
- The higher you are on the organization chart, the more you know (one of the underlying premises of job competency models).

PKM is a framework that enables the re-integration of learning and work and can help to increase our potential for innovation. It's time to design workplaces for individuals, and their Personal KM, instead of getting everyone to conform to a sub-optimal structure that maximizes capital but not labour. Knowledge is the new capital, but it resides in each person's head.

To address complex problems, businesses have to rely more on individual tacit knowledge, and this type of knowledge is never easy to convey to others. It takes time and especially trust to make multiple attempts at clarification. Accepting PKM as a flowing series of half-baked ideas can encourage innovation and reduce the feeling that our exposed knowledge has to be executive presentation perfect. Workplaces that enable learning in a trusted space can expose more tacit knowledge. We can foster innovation by accepting that our collective understanding is in a state of perpetual Beta. This is how we can create a culture of innovation.

One of the primary reasons to promote learning at work is because it is directly linked to innovation. Gary Klein examined 120 case studies and in, *Seeing what Others Don't*², identified five ways that we gain insight.

1. Curiosity
2. Connections
3. Coincidences
4. Contradictions
5. Creative Desperation

Three of these can be improved through the practice of personal knowledge mastery — curiosity, connections, and coincidences. Seeking in PKM is being curious about the world and wanting to learn more about ideas and people. By developing networks of expertise we increase and diversify our connections. This diversity can lead to seeing more coincidences. The *Seek > Sense > Share* framework of PKM is one way of developing a disciplined approach to sensemaking and increasing insights.

But what about creative desperation and contradictions? How can we enhance those in order to improve our insights for work?

Creative desperation is what you do when you have run out of time or options. Organizations can be more forgiving of failure and let people experiment. If you cannot fail, you will go with what has been done before. This may be desperate, but it's not creative. Allowing failure can help develop a library of worst practices — lessons learnt. The organization can collect stories about both the successes and failures. Therefore management can still be demanding in getting work done, but there needs to be an escape valve so that creative desperation is an option. Desperation without creativity is a sign of dysfunctional management.

We can increase the possibility of finding contradictions by being open to seeing them. Adam Kahane³ has said that “*almost everything I've learned is through the*

² <https://www.psychologytoday.com/ca/blog/seeing-what-others-dont>

³ <https://jarche.com/2018/01/collaborating-with-the-enemy/>

disciplined examination of my experience” as well as an approach of “looking for disconfirming data, as Charles Darwin did”.

“I had, also, during many years, followed a golden rule, namely, that whenever a published fact, a new observation or thought came across me, which was opposed to my general results, to make a memorandum of it without fail and at once; for I had found by experience that such facts and thoughts were far more apt to escape from memory than favourable ones.” —Charles Darwin⁴

Insights lead to innovation, which is not so much about having ideas as it is about connecting and nurturing ideas. When we remove artificial boundaries, we enable innovation. In complex situations, where various people are working on similar problems, it is important to know who has done what. The challenge for distributed teams and organizations is to find ways of understanding what is happening throughout the system and ensuring it is communicated within the network.

The connection between innovation and learning is evident. We can't be innovative unless we integrate learning into our work. Improving our ability to see contradictions, by seeking disconfirming data, can easily be integrated into the discipline of PKM. For example, here are some questions that the practice of PKM can address:

- How do I keep track of all of this information?
- How do I make sense of changing conditions and new knowledge?
- How can I develop and improve critical thinking skills?
- How can we cooperate?
- How can I collaborate better?
- How can I engage in problem-solving activities at the edge of my expertise?

⁴ <http://charles-darwin.classic-literature.co.uk/the-life-and-letters-of-charles-darwin-volume-i/ebook-page-36.asp>

The practice of personal knowledge mastery is that we should continuously seek new ideas from our professional social networks and then filter them through more focused conversations with our communities of practice where we have established trusted relationships. You know you are in a community of practice when it changes your practice. We make sense of these embryonic ideas by doing new things, either ourselves, or with our work teams. We later share our creations, first with our teams and perhaps later with our communities or even our networks. We use our understanding of our communities and networks to discern with whom and when to share our knowledge. In a network economy, this is learning at work.

sensemaking

seek > sense > share

trigger

you come across new perspectives on a subject through human & machine knowledge filters



SEEK
connections, coincidences,
& be curious

activity
*modify the stories
that anchor
your thinking*

you synthesize these perspectives into your own narratives & share these to discuss for deeper understanding



make SENSE
of your experiences

outcome

your understanding changes how you interact with the world



SHARE
your narrative
& reflect upon it
with others to build
new understanding

Three Buckets

In a discussion I had with a senior Human Resources executive at a large corporation, he noted that when it comes to managing people and their talents, there are three buckets. Two of these are easy to fill, while the third is the real challenge.

1. Tools
2. Skills
3. Meta-Competencies:
 - Learning how to Learn (e.g. PK Mastery)
 - Working in Digital Networks (e.g. Perpetual Beta)

The trend is that more and more, in networked workplaces, work is learning and learning is the work. We cannot divorce learning from the work being done. Tools and skills can be developed relatively quickly. Meta (learning) competencies take a long time. This is why the personal knowledge mastery workshop is over 60 days. It is still just a drop in the bucket in developing these competencies, but trying to cram all the concepts into a one or two-day workshop is impossible. I know, because I have tried. It would be like filling a planter with more fertilizer, soil, and seeds in the belief that things will grow faster.

Meta skills require ‘meta time’. This is too often forgotten in organizations fascinated with short-term measurements. So don’t forget the third bucket when it comes to learning and development. Nurture that bucket and it will yield long-term results.

The lack of skills is not the main problem facing most organizations today, in spite of what many managers and executives might say.

Researchers Dave Swenson and Liesl Eathington identified several factors contributing to hiring challenges, but a widespread lack of skilled workers was not one them ... The Iowa researchers' conclusion? "When employers say there's a skills gap, what they're often really saying is they can't find workers willing to work for the pay they're willing to pay"⁵

Neither is a lack of tools the core issue in organizational performance. Many organizations have more tools than they need. I worked with a company that had several hundred software platforms and programs at its disposal. It still had issues around sharing knowledge, managing institutional memory, and collaborating across departments.

Meta-competencies

Tools and skills are easy-to-fill buckets, but meta-competencies of learning to learn and working in digital networks take significant time, effort, and support to fill. A long-term strategy to support these meta-competencies is lacking in many organizations today. Everyone wants a quick fix. Projects are designed around clear short-term deliverables. Few measure competencies for the long term.

The *Institute for the Future* has identified 10 Future of Work Skills⁶. They all require discipline and practice to develop.

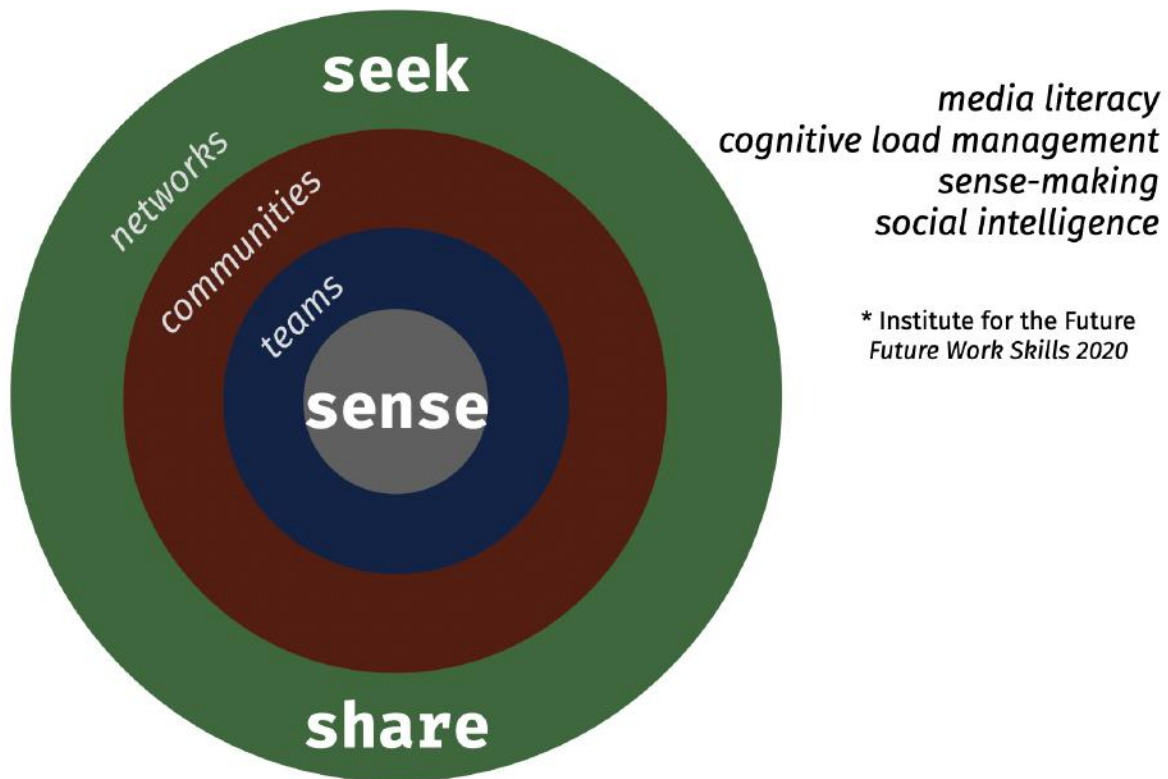
1. Sense-making
2. Social Intelligence
3. Novel & Adaptive Thinking
4. Cross-cultural Competency
5. Computational Thinking
6. New Media Literacy

⁵ <http://www.gereports.com/theres-no-thing-skills-gap/>

⁶ <http://www.iftf.org/futureworkskills/>

7. Transdisciplinarity
8. Design Mindset
9. Cognitive Load Management
10. Virtual Collaboration

Personal Knowledge Mastery



The discipline of personal knowledge mastery can address four of these skills: sense-making, social intelligence, new media literacy, cognitive load management. When people practicing PKM get to work together, they can develop more of these essential competencies through social learning, by working out loud, from modelling behaviour, or being supported through cognitive apprenticeship.

Working and learning out loud are essential practices that can change the nature of work. They help make transparent what is happening in the organization and democratize knowledge creation. First of all, everyone must be engaged in observing their environment. Then groups of people can work on problems together and learn as they work. The results of working and learning out loud can then be codified as network knowledge, which is always open for modification, as knowledge flow becomes knowledge stock.

Working out loud in teams and sharing knowledge in diverse communities of practice can develop more of these essential future of work competencies, such as virtual collaboration. But this work must be done in an environment of ‘perpetual beta’.

Experimentation and learning by doing must be part of everyday work. When work is learning and learning is the work, then novel & adaptive thinking can bubble to the surface. This is working in perpetual beta.

We do not have a traditional skills shortage and we do not lack the tools. The meta-competencies of learning to learn and working in digital networks cannot be taught in any classroom. They need to be embedded in the organizational operating system.

This includes:

- Providing time and space for self-directed learning
- Encouraging working out loud
- Supporting communities of practice for all workers
- Promoting cooperation across departments and outside the organization
- Openly supporting experimentation

It’s not a skills gap we have, but the lack of ecosystems to develop the necessary meta-competencies for the network era.

Permanent Skills

Are soft skills the new hard skills? I asked this question six years ago. I would now suggest that hard skills are really temporary skills. They come and go according to

the economy and the state of technology. Today, we need very few people who know how to shoe a horse. Soft skills are permanent ones. In a 2017 *New York Times*⁷ article the company LinkedIn had identified a number of currently in-demand skills.

HARD SKILLS:

- Cloud Computing Expertise
- Data Mining and Statistical Analysis
- Smartphone App Development
- Data Storage Engineering and Management
- User Interface Design
- Network Security Expertise

SOFT SKILLS:

- Communication
- Curiosity
- Adaptability
- Teamwork
- Empathy
- Time Management
- Open-Mindedness

Companies are realizing that they can train for hard (temporary) skills so they are focusing on hiring for soft (permanent, meta skills) as reported by the *New York Times*.

⁷ <https://www.nytimes.com/2017/06/28/technology/tech-jobs-skills-college-degree.html>

In Rocket Center, where rocket engines were once built and some composite materials for American fighter jets are manufactured today, IBM occupies a few buildings and employs 350 people, including Mr. Bridges. They are working on cloud computing, cybersecurity, application development and help desks.

In the last two years, nearly a third of IBM's new hires there and in a few other locations have not had four-year college degrees. IBM has jointly developed curriculums with the local community college, as well as one-year and two-year courses aligned with the company's hiring needs.⁸

Most of these permanent (soft) skills are what separates humans from machines. For the past several centuries we have used human labour to do what machines cannot. First the machines caught up with us, and surpassed humans, with their brute force. Now they are surpassing us with their brute intelligence. There is not much more need for machine-like human work which is routine, standardized, or brute.

This requires a rethinking of how we categorize work, define jobs, attract and retain talent. And I mean talent, not labour. It also means a rethinking of our entire education system. These permanent (soft) skills are not developed through standardized curriculum based on temporary (hard) skills. It's time to take the long-term view on human work and learning. Labour is a temporary skill for market and technological conditions. Talent is our long-term value as humans to each other.

⁸ <https://www.nytimes.com/2017/06/28/technology/tech-jobs-skills-college-degree.html>