Meta-Narratives of Level and Utility (Knowledge Management, Part 4)

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Please note: This transcript has been edited for clarity.

> *How does one tell the difference between information meant for beginners versus information meant for experts? The short answer is the level of abstraction, regardless of the domain. What is meant for beginners tends to be more detailed or more prescribed than what is meant for expert use. And then there are gradations in between, like what would one consider appropriate for intermediate members, those whose competence has matured from the entry level. But in practice, if you don't know who is the source of a particular piece of knowledge, it's not always easy to tell whether the knowledge is meant for beginners use versus what is reserved for experts. This episode is going to cover the first metanarrative I wish to present, and that is how one model's knowledge on the basis of its sophistication and utility. But this is going to require more than just one metaphor.*
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> *My name is Tom Galvin and these are my Reflections on Management.*

Back in the main Talking about Organizations podcast in Episode 27 when we covered Andrew Pettigrew, "Context and Action in the Transformation of the Firm," [that introduced] Pettigrew's Triangle, is one of those that I've highlighted in the past as a model that explained to me something about existing models that always bothered me to that point. Before that episode, I had been somewhat limited in my knowledge on change management and change management techniques. And so the types of techniques that I was familiar with tended to be process models. I had always raised questions in my mind as to the sufficiency of a process model and pedigree is triangle is what cued me in that there was a little bit more to it.

Process was important, but so was the content of the change management effort. What is the problem to be solved and what are the methods going to be used to approach the change problem? And also the context, the internal and the external context, the situation, who's involved and all that sort of thing? And all those come together to show a much richer picture on what's involved for change management.

For this reason, I'd also been thinking about other models and where they fit. Like what are their purposes? Because from my days as a knowledge engineer, working artificial intelligence and also through my professional experience, I knew inherently that there were models that were aimed to help provide simple utilitarian type solutions to problems that anybody could use. And then you had others. This is what Expert Systems was originally designed to capture and those things that require significant amounts of intuition and judgment. One of the meta narratives that I've been using has been to try to figure out how, in the general case, do I differentiate, given the bucket of raw knowledge

that I've encountered and all of these DVDs, what is useful for a beginner versus what's useful for an expert? And that's because when you don't have them sorted in that fashion, we tend to package things or file things by project. We don't necessarily differentiate them as we're just collecting and using knowledge. And in effect, what happens is that we when it comes time for us to train or onboard new people, that's a sorting function that we do in the way that we present the knowledge to others. It's not embedded within the knowledge itself. It's part of our interpretation. It's part of our sense making, I guess. So then when you don't have those cues, when you don't have the information about how somebody was using the knowledge and you're just looking at the raw knowledge or the raw bits of information itself, it can be a bit of a challenge to figure out what's really meant for beginners or experts.

One of the things that I came up with was a metaphor for what I would call the 100, 200, 300, and 400 levels of knowledge. I actually have been using this for some time, but I hadn't applied it in this sense. Where I had been using it was more in publications. You probably see from my background on the website, I do a lot of writing of textbooks or educational texts that are very specific for the professional purposes of my institution. There are some texts that I write which are geared for very, very specific, narrow educational purpose. It's a tailored specifically to a course, like perhaps a working paper. We call them faculty papers -- I'm sure they come under different names -- but they're fundamental, simple, designed specifically for a student in a particular professional education program to devote a certain amount of time to a topic rather than giving them all of these academic papers or a bunch of books to read or whatever in order to make the best use of the student's time is to come up with a paper that is fairly short.

Could be six, could be ten, usually not much longer than that. But the point being 6 to 10 pages in which these are the fundamental building blocks that anybody has got to be able to walk away with. And then if you know, want to know more, you can read these more advanced texts or whatever. But this paper sort of satisfies the most immediate, the most useful purpose. And then you have other texts which are designed to provide that depth. So that might be for a more intermediate student, one who has a little bit more experience or something, and then you have others other knowledge, which is really geared towards the higher end of education, the higher level of expertise in order to build that professional competence, like going back to Abbott, being able to do that professional inference, diagnose a problem beyond the what would be the simplest of algorithms and be able to deliver a treatment so it. If I'm taking this particular knowledge and I'm looking at how I'm going to build a story around it that could allow anybody to be able to read and understand what's going on.

I've got to in some way make sure that I'm sorting and providing some sort of a sorting function to be able to differentiate what appears to be the building blocks of the model or framework in question. I have to be able to present basic framework that can cover anything within a particular domain of expertise that would constitute the entry level aspects. You know, what are the basic terms that anybody working in this domain would need to know versus what are the terms that need to be introduced as your competence goes higher, as you become a little bit more expert? And then what is the knowledge that helps to develop those professional rules, the heuristics, the ways of thinking about a problem that would be appropriate for experts but would be dangerous in the hands of a of a

beginner without proper supervision, proper mentoring. With that, there's also differences in the way that the knowledge is used. And then this gets me back to the question of Pettigrew's Triangle. We have a model or a series of change management models that serve a particular purpose. They're process models. Now, what is it that you want to get out of a process model? Well, the answer to that is you want to know *what to do*. How do you start, what kind of activities do you perform and how does it end? So, if you have a process model, that's what people want to take away from it.

What do you do? What I found is that as I started going around Pettigrew's Triangle, thinking about content and thinking about context, there are other purposes behind models in use that then have to be explained or have to be introduced in in order for people to use the information. And that's very separate from the purposes of a process model to decide what to do. So for example, on the content side, if we're talking about problem definition or problem diagnosis, the purposes that we want is we want to be able to *describe* and *explain* the problem.

Now [what is] describe and explain? "Describe" would be how do you observe a phenomenon. And then "explain" is how do you interpret the phenomenon and to communicate the phenomenon to somebody else in simple terms. And from a knowledge standpoint, there's a lot of taxonomic kind of things in there where just about everybody is talking about, "Okay, we've got to solve this particular problem. Take all the information. You bucket it in this particular way," much like we did in Wiesbord six-box model. There are six areas -- this is the title of his paper, Weisbord's paper -- six places to look for trouble. And so, you have the six boxes. And if you're looking for symptoms of an organizational problem, you could probably bucket those symptoms into one of those six boxes.

And then on the context and this is where you talking about external context and stakeholders, we're talking about internal context and membership, personality, culture, climate, all of those factors that weigh into a change management. And what came to mind is, is that there's a whole bunch of models out there that basically are about *making decisions*. You know, how do we make decisions? Is it through a very, very strictly rational process? It says that how we weigh options and look for opportunities, you know, is it algorithmic? Is it truly inference driven? I mean, is it gut reaction, gut feeling or something of that nature? And there are models that basically help with decision making and decision support.

So what I was thinking, you know, on the one hand, there [are] different levels of abstraction that separate what's beginner level versus what is expert level, but it's also divided according to these four different functions -- *describe, explain, decide and act*. So then, what I ended up with (and I will have this in the website for you to see), is I actually developed a four by four matrix that takes the level of information against the function that the information is serving as a way of trying to figure out how to organize, categorize the information within these major domains of expertise in the archive that I'm studying. And the reason why I think this is kind of important is because when you really get down to it, a beginner is going to look at knowledge a certain way. An expert is going to look for different things in the knowledge, but it's also going to depend upon what purpose that they're looking for the knowledge.

And so, if they're looking for something to help them describe and explain a phenomenon, but everything in the archive is geared towards telling them how to make decisions or how to take action, [then] they're not going to be satisfied. The archive has to be mindful of both dimensions, so I'm going to walk through the four purposes and talk about them from the 100 to the 400 level. What I'm going to use is the 100 to 400 metaphor, which is based on kind of like what I grew up with in college as the way you differentiate it freshman level from sophomore level to higher level. It's not a perfect metaphor because obviously it goes more than four levels [in real life].[1] But the idea being to separate what to beginners need versus what do more advanced people need.

So I'm going to start with *describe*, ok? The purpose for a model that describes a phenomena is to provide the ability to take observations and sort them sort them in some way to be able to determine what are you seeing and also what are you not observing. It's a way of completeness. It's with a taxonomy. You are able to say that, okay, I'm seeing these things, but I know that the phenomenon, as observed, has these much larger number of buckets, and I don't have any information on these buckets. Perhaps I need to go seek that information out. So there's a sense of an ability to think about a comprehensive look at a phenomenon so that you can later make decisions and act on it if you need to.

Now, the 100 level when I consider what we do for beginners, we're talking about the simplest of taxonomies. We're talking about how do we figure out the small number of buckets? And perhaps there's a magic number like three, five, no more than seven, probably that would be all encompassing that we can say, like with Weisbord's Six-Box model. You take all of your information, you can bucket it in here and you won't really go wrong. You won't necessarily go right. You won't get too sophisticated, but you won't go wrong. But then as you go up to the 200 level, which is where perhaps we're trying to meet some of our students, well then the taxonomy can be a bit more sophisticated in which you can include ambiguous or uncertain classifications or conditional classifications. So it's not that you're necessarily sorting things into six boxes, you're sorting them into subdomains, of which the sorting is conditional – [that is,] under certain conditions. You may be looking at the relationships between the buckets or something of that nature. There is fuzzy logic involved with 70% like this belongs here, or this is this sort of category with 70% confidence as opposed to the total confidence that a beginner would use.

And then when you get up to higher levels of abstraction, the taxonomy becomes much more fluid, it becomes almost situation dependent, it becomes a more strategic, the contextual way in which you bucket things becomes even more important. Causation. Understanding causation would be another example of how you would abstract even higher, because it's no longer just about how you bucket it, but how you understand what led to that phenomenon happening. And then at the at the highest level we're talking about, then what's the knowledge to create the taxonomy? What's the knowledge that the meta knowledge that allows you to say, okay, the Six-Box model is wrong. I have sufficient understanding of the situation, a meta-analysis. Through all of my experience, I'm saying it's eight boxes or it's nine boxes or ten, where now the expert is the one who's the architect of an

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[1] For example, 400 infers a stop at the senior undergraduate level, whereas graduate programs at the Masters and doctorate have several levels above it.

alternative model. And this involves much deeper forms of research and validity testing and that sort of thing. So now as I'm looking at the archive of information and I'm trying to figure out I have a lot of a lot of archival information that talks about how we describe problems or how we describe phenomena within this broader domain of knowledge. Now, I can look for how the organization, the experts or the users of this domain would sort of understand, okay, if you're a beginner, if you're one who's just basically looking for the basic building blocks, you start here and work your way up based on if I'm comfortable with the basic terminology, then I can go on and and expand.

I'm going to go into the describe column much more next time when I do a deep dive into each of these functions and talk about specific meta narratives that that are associated. But I just want to run through the other three real quick and just give you an idea of what they look like.

So, the next one is *explain* and explain is where you do the interpretation and at the basic level -- at the beginner level. The explanation is about how to determine just basic deterministic causality at a fundamental level. You want to know that X causes Y, here's why X causes Y in the general case, and then for the beginner to advance, they'll understand that there's nuance involved. Nuance becomes involved, say, at the 200 level. And this is where you start to build frames or patterns. You start to develop heuristics that says X may cause Y. But now we're going to talk about how W influences -- maybe it moderates the relationship between X and Y, things of that nature, but basically at a simple level where it's still a little bit more you're still trying to show determinism to an extent with a little bit of nuance, and then the nuance goes on at higher levels.

Now the 300 level we're getting into the case approach, we're getting into history, we're getting into critiquing the causality or charges of causality and thinking more broadly about complexity, perhaps higher levels of analysis. And at the 400 level, this is about theorizing, this is about research questions we might be more accustomed to. And so I think with explain, it's actually is an easy example to map to the academic setting because it kind of represents the difference between, say, a book on an on something for dummies at the 100 level that goes all the way up to an Academy of Management Journal article at the 400 level.

And when we start talking about what is going to work for practitioners, you can understand that. Yeah, we need to be at the 100 [or] 200 level language to be able to speak to them, but experts have to be at higher levels. They have to have much more understanding of the phenomena to be able to explain it. So then I'll cover the explain column much more detailed fashion in a future episode.

The third column is *decide* when we get to the 100 level of models for helping with decisions. The main thing that comes to mind is the flowchart, the engineered approach, the military decision making process, or MDMP. It's very, very algorithmic. In effect, the decision is whether or not you're going to follow this flowchart, because the flowchart is going to basically provide the answer for you once you come out the other end. If you're dealing with a beginner, you want to present them with a basic flowchart to of decision making so that they at least appreciate what goes into the decision. And you want them to have confidence with the outcome.

[Then] the non-determinism, the level of non-determinism is what then signifies higher levels of knowledge. So the flowchart gives way to something that's a bit more dynamic, a bit more conditional conditions based at the 200 level. You're starting to move from a deterministic outcome to a set of possible outcomes. Competing values would be another thing that comes in at the 200 level, because the flowchart approach is very rational. Competing values add subjectivity to the model that a non beginner would need to appreciate to learn how to appreciate.

At the 300 level, you start having to think about pragmatism. Pragmatic approaches are very, very conditions based, very context specific. And you can see again decide was was born out of the context part of Pettigrew's Triangle. In essence, when we're talking about flowcharts, it's context free. As we go up to the 300 level, the context becomes center stage. It becomes really, really important because now you're having to infer what is the decisions to be made based on the context. As you see it, by the time you get up to the 400 level, now you're really getting into full blown pragmatism. Everything is its own problematic situation. Design, thinking, judgment is all becomes very big at the at the higher expert level.

And then finally, when it comes to *act* much like a flow chart, the 100 level of action is an algorithm. It's a formula. It's a set of bureaucratic steps that you do in sequence from one to end, whether that's an eight-step change management process or a three phased one or whatever, there's basically little deviation. Once you start with step one, you must plow through to step end. At the 200 level, you start talking about much more complex or really more complicated problems where the algorithms start to show some branches and sequels. So step one may lead you to steps to A to B or to C, and then from 2A, you could go 3A, 3B and 3C. So that's adds the complexity that a beginner would have to as they mature, they would have to understand. How you would determine which branch or sequence you're going to follow.

And then at the 300 level, you're getting into strategic planning. Now you're starting to take threads like if each process is a thread, then we're now starting to talk about multiple threads, competing threads, things that might it's much more of a holistic model of how you guide a whole lot of smaller deterministic activity. And then finally, at the 400 level, when we're talking about mastery, it's or mastering this, this is basically being an architect or even being an artist, just trying to express in the broadest possible terms how you navigate toward a particular solution, devise or design new processes. So it certainly would be easier to see to visualize this.

When you look at my website and you see this 4x4 matrix, hopefully what I just described will make sense because what you see is that this represents a whole multitude of ways of depicting the same kind of knowledge, such that if you're looking for beginner level stuff, you really are looking for specific things. And if you're looking at it as an expert, you're looking at other things. And if we don't have the archive built to satisfy the breadth of expertise or breadth of confidence that the users of the archive would be comfortable with, then it's going to be very, very difficult to use. The tendency will be that it'll be biased towards the beginner, which experts will not find useful, or it's biased towards the expert in which it overwhelms the beginner.

So I invite you to look at it, and again the next weeks I'm going to go into more detail about the describe next time, explain and then decide and then act in the subsequent episodes. And each one of those has its own metanarrative that I sort of introduced here that will help you think about how to organize the information at the right level so it's accessible to the right folks.

… And that's all for now. The views expressed are my own and do not necessary reflect the United States Army War College, the United States Army or the Department of Defense. Thank you for listening and have a great day.

All the Best!
Tom Galvin