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Communities of Practice and Pattern Language

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[Editor's Note: This article was inspired by comments made by Matt Taylor during the 7 Domains® Workshop held in the Cambridge, MA, knOwhere Store on August 25-28, 1997. The model for Communities of Practice was developed by Bryan Coffman and Jay Smethurst.]

For any member of a Community of Practice, there comes a time to interface with individuals and organizations which do not form part of the Community. The difficulty of this situation is the issue of language. Every Community of Practice--from physicists to painters to builders--has its own pattern language, its own way of expressing and discussing the unique qualities of its chosen art. This pattern language consists of the terms of art of the practice, the models that the Community uses to express itself and to translate reality, and the grammar that the Community uses to organize the models and terms of art.

Quote of the Week

Think of a high school math class. As a rule, very little ground-breaking work goes on in an Algebra or Calculus class. Innovation generally comes later, once the "fundamentals" of math have been grasped, but what do we mean by "fundamentals"? What a high school math course teaches is the pattern language of the Community of Mathematicians. Algebra teaches the rudimentary terms of the art--"function", "variable", "equation". Geometry introduces some mathematical models--right angles, planes, lines, points--and some of the grammar associated with proofs--"if...then", causality, relationships. Calculus develops all three elements of the pattern language--vocabulary, models, and grammar.

Now, the pattern language of mathematics is essential for practicing the art of math. Certainly without this foundation, higher mathematics would be inconceivable. What is missing from many high school math courses is the reason for learning this pattern language--the passion and the art. The pattern language is a valuable tool, but only if it is used to achieve something. Occasionally, this indoctrination in the language of mathematics will spark a passion in a student strong enough to make that student a member in the Community of Mathematicians, but normally this introduction to the art of mathematics passes as rudimentary understanding into other Communities of Practice.

A Community of Practice does not exist outside of its membership, but its essence is more than the mere sum of its members. A Community normally forms around an art, a discipline, and it is the passion for that art that creates the loyalty and the organization. Of course, members drawn to the Community of Practice will be attracted for very personal reasons, and will each have a different perspective on the nature of the art that they are practicing. These different understandings will lead to a diversity of forms and practices which will lead inevitably to controversy. It is this controversy that must be both nurtured and resolved.

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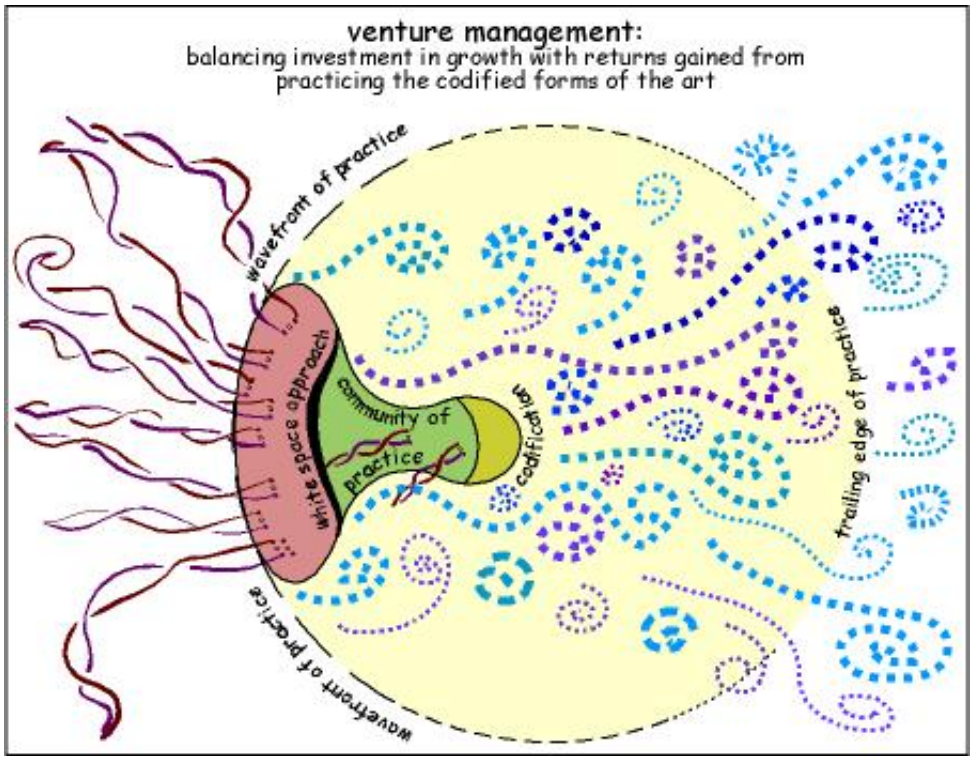

Practitioners of an art must push its limits. Art is exploration, and to do simply what is already known is to kill both the art and the artist. An artist must reach into the unknown, must draw from other arts to enhance his own. Outside of the known is the void, the "white space" from which all inspiration comes. (See the Benjamin Hoff quote from 1997/07/27.) As individual artists reach out in their own ways into the white space, they both make it known and bring themselves into the unknown. In so doing (so long as they do not break entirely away from the Community), they pull the Community of Practice along with them. As they venture forward, they (or their work) must engage the Community as a whole in a dialogue, exploring and explaining the white space in consideration.

Customers

Now as the artist returns from the exploration of the white space to the Community, he must use the language of the Community--the pattern language--to explain, demonstrate, defend, or otherwise elucidate his discoveries. In mathematics, the explorer must defend her discoveries using proofs based on accepted theorems, axioms and other proofs. An architect must justify his work through forms, function and materials. A gardener must be able to explain and justify any exploration in terms of arrangement, soil, minerals, water, weather and a multitude of other factors that constitute the pattern language of the art of gardening.

As artists push the Community into new territory, the "old" territory becomes comfortable and safe. The forms and earlier explorations become

part of the pattern language, change the shape of the models of the Community and eventually become codified in such a way that they can be readily understood by a novice or a lay person. Take as an example the Copernican notion that the Earth revolves around the sun. It was revolutionary and terrifying at the time it was proposed, yet since it was defended by "proper" scientific method, it became acceptable. And as it became acceptable, it became part of the pattern language of cosmology and other learnings began using this model as a foundation from which to make further assumptions. As this happened, the further assumptions became terrifying to the lay person and the Copernican model became commonplace--so commonplace, in fact, that it was no longer of any particular interest to those on the cutting edge of the discipline.


Modeling Language

Nevertheless, as new ideas in one Community of Practice are accepted within the Community and codified, they can be passed on to the general public for easy consumption and possible application to other fields. It is in passing on the codified idea, when non-practitioners find value in its codified ideas and practices, that a Community of Practice can generate return on their investments in exploration. The groundbreakers in the field of complexity theory, like the Santa Fe Institute, were ignored as marginal and irrelevant until businesses, economists, and other industries began discovering possible value in the work that complexity theorists were doing. Our recent 7 Domains® Workshop, for example, represents an attempt by lay folk to apply the trailing edges of complexity theory to an entirely different discipline.

Communities of Practice exist as their pattern language. This language must be robust enough to express the depth and breadth of the art form, and malleable enough to accomodate change and debate inside the discipline itself. This language must also be coherent enough to allow itself to be codified and translated to other Communities of Practice to be used and adapted to suit their particular needs and visions. All Communities seek to explore the white space. It is their method of exploration and their means of communicating their experiences of exploration that differ.

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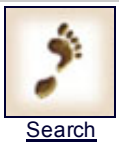
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