

STEPS TOWARDS A NATIONAL GEOSPATIAL VOICE

“With our thoughts we make the world.” Guatama Buddha

We currently face a crisis of sorts in trying to find a national voice for the geospatial community. Each of the geospatial sub-disciplines feels that it has a, if not the, critical and central role to play, and that it may be better to be an independent voice rather than have to join with others from different sub-disciplines. The looming break-up of ACSM is causing us to re-think national organizations, but we still seem to think we must have one, and that we have to be its core (whoever “we” may be). This thinking got us to the current crisis, so it won’t help get us to a solution.—by **N.W.J. Hazelton**

The Expansion of the Universe

*“Scientists tell us that galaxies, planets and stars, in fact the entire universe, is rushing away from Earth at up to the speed of light. But then, who can blame it?”—
Alfred E. Neuman*

An interesting aspect of the expanding universe, as we currently understand it, is that no matter where you are, the rest of the universe appears to be moving away from you. This means that every point can be considered to be the central point because it appears to be in the middle of the expansion. In fact, there is no central point, for the reason that such a point is no different to any other point.

In the expanding universe of geospatial information, each of us sees ourselves as the center of the universe. What we do is critically important and central to the entire endeavor, while the activities of everyone else are, by definition, peripheral. The only problem with this thinking is that we fail to realize that everyone else has the same view of the universe, and the same perspective. From the big picture, we can see that we are all at the center of the universe, at the same time as none of us are at the center.

Once we realize this basic truth, we are in a position to look to what it will take to create a national voice for geospatial information people and processes. None of us can stand alone and be everything, and even our own endeavors mean little unless they are part of the larger context, as presented in the spatial data cycle (see opposite).

Spatial data collection has little meaning if that

data cannot be disseminated. Spatial data has little meaning if it cannot be analyzed and transformed into spatial information. Spatial information has little meaning if it cannot be combined with pre-existing patterns to generate spatial knowledge. Spatial knowledge has little meaning if it cannot be used for intelligent decision-making. No part of the spatial information cycle can exist without all of the others, and no part of the cycle should operate without consideration and understanding of the other parts.

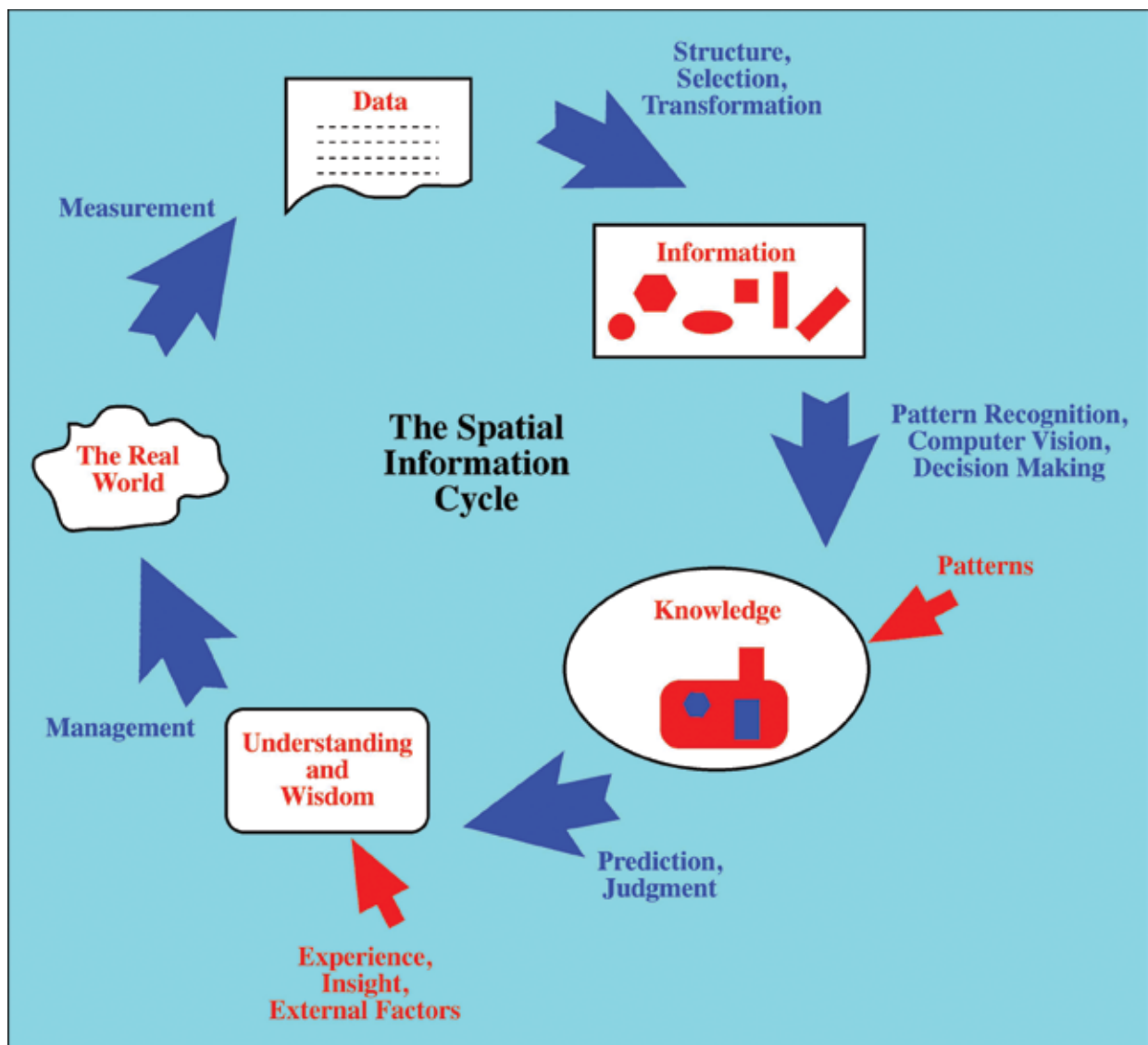
This change in thinking—as radical as the change in thinking from a geocentric universe to a Copernican universe—is the first step towards a national geospatial voice. It will not be easy or pleasant, but it is necessary for every geospatial sub-discipline.

Understanding the Spatial Information Cycle

“A man’s mind, stretched by new ideas, may never return to its original dimensions.” — Oliver Wendell Holmes Jr.

If we are to be part of the spatial information cycle, we need to have a basic understanding of how all the parts of it work, even those beyond where we choose to work. If we look at the management and decision-making parts, we may fail to see that there is also a “selection” process in going from data to information. How do we select the right data?

We can only do this data selection based on understanding the needs around the entire cycle. We can explore the question “Who is our client?” But unless we understand their needs, as opposed to what they say they need, we are not in a position



to meet those needs. Similarly, unless we understand the processing ahead of us around the cycle, as well as what happened to the data before it got to us, we cannot properly fulfill the professional responsibilities of any part of the cycle.

It is this critical need to understand the entire spatial information cycle that dictates the level of education needed for any professional who may work around the cycle. Given the large extent of this understanding, a U.S. bachelors degree would have to be the minimum level to achieve such an understanding. In addition, significant experience is also needed to allow a realistic understanding of the entire cycle.

Experience is needed because the way that an expert's mind works is largely pattern recognition,

and this is part of the spatial information cycle. Pattern recognition requires two components: a store of patterns to be recognized, and the skill to do the recognition. The former can be developed effectively through concentrated study, typically formal education, while the latter requires experience with many instances of the patterns of interest. Formal education also develops the theoretical underpinnings for the various components of the cycle, and allows the student to gain limited experience around the cycle in ways that are not available to any single organization.

Education and experience are thus a vital next step towards building a national geospatial voice, but both must be directed toward understanding the whole spatial information cycle, not just a small part of a particular interest.

Communication

“The real voyage of discovery consists, not in seeking new landscapes, but in having new eyes.” — Marcel Proust

Every component, and every organization that supports and promotes that component, has some place in the spatial information cycle. The spatial data collectors, the spatial data managers, the spatial information analysts, the theoreticians, the people who provide the control, the people who support the administrative and legal components of the cycle, and even the teachers (and students) who support the cycle all have a place. Despite some views to the contrary, the cycle needs them all, together with the organizations supporting each specialist area.

The spatial information cycle has become too complex for anyone to specialize in more than part of the cycle, and those specialists need support for their specialization. Various organizations provide that specialized support, but no one of them is more important than any other.

Ultimately, all the organizations and people need to be able to work together in a professional manner. This may be a bit much to ask at present, but we can move towards this goal by opening the lines of communication. Communication is a two-way process, so each group and individual must listen and learn at least as much as they talk and explain. If our thinking has opened up to encompass the entire spatial information cycle, and we don't think we are at the center of the universe, this becomes much easier.

In Alaska, all the various spatial information support organizations have a single annual meeting. This was originally because of size and geographical spread, but a side effect has been that the various groups are more aware of each other than in some other states. This model can be adopted in other states and regions, hopefully with even greater success.

In these difficult economic times, one way of securing income is to diversify operations. Diversifying around the spatial information cycle is one way to do this without wandering too far from one's professional home. Add to that the increasing diversification of technology and techniques in use around the cycle, and one gets significant benefits to connecting more with the rest of the cycle.

The third step is to increase significantly our communication with other groups around the spatial information cycle. This will have benefits in terms of improved mutual understanding, as well as diversification of the capabilities of all groups.

Creating Spatial Information Professionals

“We all have big changes in our lives that are more or less a second chance.” — Harrison Ford

As the information sector of the economy and its impact on our information society continues to grow, we need to look at increasing the professionalism of the various practitioners around the spatial information cycle. Unfortunately, we do not have a good handle on what we mean by “professional.” This is partly because we confuse state-run certification with professionalism, partly because we live in a society that has become strongly anti-professional over the last 100 years, and partly because we have lost most examples of professionalism.

Too often we have sought state-run licensure as a means of controlling other groups, in cases where the health, safety, and welfare of the public has not been a real factor. It should be noted that “the public” is not “the client”: there is no shortage of law relating to contracts and the relationship between professionals and their clients. “The public” is everyone else, for whom the law of torts represents one of the few avenues of redress against someone else's paid professional. In the latter case, prevention is far better than trying to fix a problem after the fact, and the role of government is to protect innocent bystanders.

Traditionally, professions managed their own entry and certification for professional practice through various professional bodies. ASPRS is moving in this direction with its certification program. For many professions, and for many practitioners around the spatial information cycle, this approach may be enough. In these debt-ridden times, do we really want to create another layer of government bureaucracy if we can avoid it?

Some professionals have the potential to cause significant harm to the public if they act unprofessionally. Surveyors undertaking boundary surveys can damage the property rights of many nearby landowners through a major error, and a county GIS operator can do the same thing with an ill-considered series of actions. We do need to look at state-run licensure in these cases. But a photogrammetrist or cartographer producing a map for a client has much less potential for damaging the public, as does a surveyor undertaking a topographic survey or supporting construction. They may damage their client, but the client has

very direct redress under law. So we need to think very carefully about licensing anyone who might be a professional.

While government-run licensing is appropriate in some disciplines, we should be focusing more on developing professionals, in the true sense of the word, but regulating them within the professions, not passing this off to the government. This gives the professional bodies an important reason for existence and for the continuation of their professions. It also obliges them to look at education and communications around the spatial information cycle, so that the professionals they certify strengthen the entire cycle and make a significant contribution to the information economy and information society of which they are an integral part.

The fourth step is moving more directly and definitely towards expanding the professional skills and practices of all practitioners within the spatial information cycle. Professional certification and licensing should be carefully considered and implemented thoughtfully and with care. Professions need to self-regulate first, as well as look to recruitment, education, and communication within the cycle.

From Differentiation to Integration

“But just as much as it is easy to find the differential [derivative] of a given quantity, so it is difficult to find the integral of a given differential. Moreover, sometimes we cannot say with certainty whether the integral of a given quality can be found or not.” — Johann Bernoulli

For many years, we have spent a great deal of time and energy differentiating ourselves from the other groups who work with spatial information. We set up silos and vertically integrated activities, created sub-disciplines, fought turf wars, and thought ourselves the most important component of working with spatial information.

We lost sight of the common bond of spatial data, which provided both the lifeblood of our work, and the link to the rest of the spatial information cycle. Like Esau, we traded away our birthright, a future that encompassed the entire cycle, for a bowl of pottage and a small corner to ourselves—but always subject to the whim of technological and economic change.

The time of differentiation is over. It is time to look towards integration. This cannot be complete integration: the discipline is now too big for that. But we need to figure out how to develop a common voice

so that we all have a place in the information society. It will not be easy to achieve this. For, as it was easy to differentiate ourselves, so it will be difficult to integrate, and we cannot say if such an integration can be found or not. But we have to try; otherwise, we risk losing this chance.

It is not enough to hope passively to be saved. Hope means preparing, planning, and then acting when the time is right. The preparation of the first four steps will place us where we can act on the question of integration.

The fifth step, therefore, is to move actively towards integration, but we cannot do this until we are communicating with other groups and understand their position in the spatial information cycle at least as well as our own. Integration means that we work for the betterment of everyone around the spatial information cycle, and our larger society, because it is the professional thing to do.

Conclusions

The conclusions from this discussion are the steps towards a national voice, perhaps even a national organization. But do we really need a national organization? Could we get by with a small executive organization that somehow integrated more specialist organizations? This would be the MO model of ACSM, and that doesn't seem to have worked, perhaps because no one really believed in it. Perhaps the changes in thinking discussed above would make that model work, but there still needs to be involvement from the other spatial data organizations.

Integration is the fifth step with good reason. Until each spatial information sub-discipline gets its house in order, learns its place in the spatial information universe, and focuses on becoming more professional, it will not be in a position to have any degree of integration. Once the first four steps are well under way there is the possibility for the communication to be extended to the subject of integration.

To go back to the first step, how we collectively think about our profession drives its future. If we want the current situation to continue, if we want more of the same, all we need do is keep thinking the same way. If we want things to be different, we must think differently about our profession. If we can change our thinking, we can change our world.

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