

Appendix 1

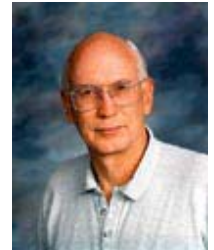
OGC: Near a Tipping Point

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In my opinion, OGC is nearing a tipping point between remaining a successful, consensus-based standards organization, and being seen as ineffective and a poor business investment for its members. It appears to me that OGC has encountered a situation common to most maturing organizations. As they have grown, they have accumulated a set of policies and programs, some of which are now inappropriate for their current situation.

This is a serious matter. One senior official recently stated, "We have been significantly concerned about the growing number of OGC's possible conflicts of interest and their competitive behavior for some time, and have not been satisfied with the results of our efforts to resolve these issues." I have found through other sources that one agency has suspended OGC funding until their concerns about OGC's behavior can be resolved. So, it appears that some of OGC's current policies and programs have generated enough concern with some of their constituents to affect their own bottom line.



However, OGC has accomplished much and there is a strong, continuing need for their successful standards process. I believe that OGC can remain a vital force, but they need to evaluate their policies and programs and create a fresh strategy.

About this article

Let me describe the route that led to this article. For the last several months, we've heard a lot of heated discussion about the Federal government's award of a contract to build the Geospatial One Stop (GOS) portal. For those of you who are not familiar with the GOS situation, it involves a series of intertwined events, starting with an OGC contract to develop an open portal architecture; the initial selection of ESRI to provide a prototype of that architecture, an informal protest by the Open GIS Consortium (OGC) and some of its members; and the Government's procurement process for a production portal. While what happened in back rooms is still murky, the essential facts surrounding GOS are a matter of public record. That combination of events released strong, unresolved feelings within our industry.

As part of my work as a market analyst, I spend a fair amount of time listening to a wide range of people in the geospatial industry. Before the GOS event, the comments about OGC were positive to neutral. After GOS, the tenor swung sharply and consistently to the negative. This seemed like a significant development, so I interviewed 37 people in government and private industry as well as OGC members and OGC executives to try to understand the root issues.

To get to this point, I have taken this article through three write/ review cycles with OGC and a number of high-level OGC members. Also, during the review process a number of concerned parties provided unsolicited, but useful information. However, this article is not a piece of quantitative market research. Nor was I paid to do it. This article simply represents my understanding of the information provided by all the people that either I contacted or contacted me. My sincere hope is that the information in this article will provide one set of discussion points for OGC and its members as they go forward.

The Issues

Through interviews and the review process, I have found unresolved issues that run a lot deeper than the GOS portal award. The central issue is OGC's role as a consultant. Other issues include: the perception that select members have a disproportionate effect on OGC direction; confusion and frustration on the part of members and non-members with some OGC decision and conflict resolution processes; the use of OGC Conformance by some members to imply "interoperability", and OGC is perceived to have used their position to impede ESRI.

These issues are complex and highly charged. They can't be seen as black-and-white. However, our industry needs to sort it out. At stake is the valuable work OGC has facilitated toward open geospatial standards and our industry's evolution toward broader markets.

My intention in this article is to describe and analyze the issues. Any judgments that need to be made will be made by OGC members and the market. But, considering the angst that persists after the GOS event, there needs to be an open, public discussion to clear the air.

OGC Operating Modes

I'll start this discussion by outlining the two principle ways that OGC facilitates standards.

- Since 1994 OGC has managed a consensus-based process where members develop geospatial interface specifications. OGC, with the consent of its members, brands these specifications under the OpenGIS trademark. OGC also provides conformance testing for many OpenGIS® specifications. Over the last twelve months OGC and its members have greatly improved their conformance testing and are even developing automated testing tools. The OGC consensus process and conformance testing appear to be well managed and well respected. Members support these processes through membership fees and dedicated labor.
- OGC facilitates standards through consulting projects. OGC staff administers these projects. Generally, a select few OGC members are involved in each project. Those members may be compensated for their efforts. A client (or clients) funds each project and specifies the results.

OGC intertwines their consulting projects with some consensus-based activities under the label of the "Interoperability Program," but the two strategies are very different. One is controlled and funded by OGC members for the benefit of its members. The other is controlled by OGC staff and funded by clients primarily for the benefit of those clients.

Background

Before I outline specific OGC issues, I'd like to lay out some essential background on two topics: conflict of interest and standards organizations.

As an aside, let me briefly mention "tipping points." The definition of tipping point is intuitive. It is the concept that small changes will have little or no effect on a system until a critical point is reached. Then a small change "tips" the system and a large effect is observed. While this term is used in a number of different ways, I am using it because it is shorter and simpler than saying, "the straw that broke the camel's back."

The GOS controversy may have been a minor tipping point for OGC. My concern is that without some corrective action, OGC will encounter a much more significant point.

Conflict of Interest

Conflict of interest is a flashpoint subject. Any individual or organization that is publicly perceived as having a conflict of interest can lose credibility, sometimes irreparably. Simply put, an individual or group that may be seen as acting in its own self-interest to the detriment of their obligations to others is in conflict of interest territory.

Conflict of interest may or may not be illegal in a given situation, depending on obligations and on the potential for financial damage. For most, the main risk in conflict of interest is loss of credibility. An executive from a large, multinational systems integration firm who reviewed this article notes, "Perceived conflicts of interest can undermine confidence in the standards that the OGC promulgates. I am concerned about this and have made my concerns known to our representatives to the OGC."

Standards Organizations

Let's shift gears and look at standards organizations. On any given day, there are about 600 IT standards-related organizations extant on earth. A few like ISO and IEEE have existed for a long time. These organizations are widely respected because their standards processes are seen as fair and because some of their standards like ISO SQL and IEEE 802.xx have demonstrated real business value.

A few more standards organizations like the Internet Engineering Task Force (IETF) and the World Wide Web Consortium (W3C) deal with more specific phenomena like the Internet and the Web. They work on standards like http, IP, XML, and SOAP. IETF and W3C are effective because their standards processes are seen as largely fair and because their standards are becoming commercially pervasive.

The other 600 or so standards organizations are smaller consortia or working groups that generally deal with industry-specific issues. OGC is one of these. These groups come and go as their markets rise and fall. If they survive, it is because their standards processes become respected and, within their neighborhoods, their standards become commercially pervasive. Consortia are also attractive because they can generally move faster than the more formal standards bodies. For a more complete discussion of IT consortia and the standards process, see www.consortiuminfo.com.

Members are both the strength and weakness of standards organizations. On one hand, members provide the financial resources and brainpower needed to make the standards process work. In the utopian view, an industry's best and brightest work together for their common best interests. It's all for one and one for all – and all that jazz.

Two factors temper the utopian view:

- Businesses invest in standards groups for the same reason that they invest in anything else, for a return on investment;
- Competitors will use standards groups, market research firms, testing labs, or any other resource to gain competitive advantage.

Companies may join standards organizations to realize a variety of returns on their investment. Some big companies like IBM and HP form consortia to make standards adoption more predictable. Other companies may try to create a new market through a consortium. Some companies believe that standards will improve their

industry's overall economic picture and consequently their own situation. Sometimes the return is about influencing the direction of a standard. Some companies just want to keep up with what the competition is doing. In the end, each member expects a specific return for its investment. Increasingly, companies demand a tangible, positive ROI from their standards investments. If they don't see it, they stop spending.

That brings us to the second point: competitors use standards groups to gain competitive advantage. So standards organizations become a natural battleground for competing members to harangue each other about the other's lack of "openness" or "interoperability." Each time a donnybrook erupts, the belligerents loudly claim that they are only doing what is best for their customers and wave their standards credentials as evidence. Hang around the IT industry long enough and you eventually realize that while the actors change, the scripts in this tiresome play remain the same – like plot lines from "Dumb and Dumber."

So these two factors, expected ROI and competition among members, make the standards process devilishly difficult for a consortium to manage without being overwhelmed by competing interests. Here is a current example – the open warfare over Web service standards. Today, four organizations – Liberty Alliance, OASIS, W3C and WS-I – are vying to preside over the Web standards process, each with different goals, each with differing degrees of power and influence.

Trying to gain competitive advantage, vendors are funding and counter-funding standards initiatives like gunslingers shooting it out in an old Western. When the smoke clears, there will be some set of Web service standards. But, a backlash is developing around what many see as a wasteful abuse of the standards process. (See www.cio.com/archive/100103/index.html for a special CIO magazine issue that explains the situation in depth.)

The point here is that a standards group may gain significant, short-term financial return by taking sides in competitive brawls. But "short-term" is the operative word. Taking sides in a competitive fray is risky politics for any standards group. If the group winds up on the wrong side or just gets caught in the crossfire, it will die.

But risky politics don't always have to trump good sense. Standards groups that have flourished, like ISO and IEEE, have found ways to rise above the competitive fray and to maintain their trusted positions as honest standards brokers.

Before we move on to specific OGC issues, I'll summarize six key points.

1. OGC has two distinct approaches to facilitating standards. One is consensus-based and member-controlled. The other is client-based and controlled by OGC and its consulting clients.
2. Conflict of interest can damage any organization irreparably.
3. To a great extent, the public, not the parties involved, determine when a conflict of interest exists.
4. Standards organizations, like market research firms, are subject to manipulation by competing commercial interests.
5. An open, consensus-based approach to standards is harder to maintain than are special initiatives funded for competitive purposes.
6. Standards that survive provide real benefit to users, not just competing companies.

OGC

OGC currently enjoys a trusted position as the geospatial open standards body. They achieved their position the hard way. They earned it.

OGC was founded in 1994 as a logical next step from the Open GRASS Foundation (OGF). (GRASS was a public domain raster GIS that saw wide use in government and academic organizations.)

Over time, OGC attracted almost all of the commercial GIS players, an impressive array of government agencies, and a bunch of academics and end users. OGC became a forum where members could check their competitive guns at the door, sit down, and work through standards and other industry issues.

In 1997, OGC released its first major standard, the OpenGIS Simple Features Specification. From there, OGC members have worked through a number of specifications like WMS (Web Map Server) and GML (Geography Markup Language). In the process, OGC attracted top-flight talent and became respected as a significant technical resource. They have become a resource for geospatial expertise for other standards bodies like W3C and OASIS. The OpenGIS Simple Features Specification is implemented in the open source database MySQL and in open source Java and .NET libraries.

So, it's clear that OGC has earned a trusted position as a standards body and that they have facilitated valuable geospatial standards. However, a number of people, including myself, now have significant concerns about OGC's current direction.

The many people I interviewed for this article have many different (and strongly held) opinions about OGC's direction. I've categorized the issues they raised into five groups.

1. OGC has become a consultant that conflicts with its members,
2. Select members have a disproportionate effect on OGC direction,
3. Members and non-members are confused and frustrated with some OGC decision and conflict resolution processes,
4. The use of OGC Conformance by some members to imply "interoperability" is detrimental to the geospatial market, and
5. OGC's is perceived to have used its position to impede ESRI.

I'll summarize as succinctly and objectively as possible. What I list below should be considered as discussion points in the ongoing dialog about OGC's role in our geospatial community.

OGC has become a consultant that conflicts with its members

OGC and their wholly owned European and Australian subsidiaries have clearly taken on a consulting role. OGC produces marketing materials, proposals, and products that could be produced by any consulting firm. OGC has had consulting contracts with Federal, State, and international agencies. Some of these contracts are active today. Based on the comments and anonymously emailed copies of OGC proposals that I've received, concern about OGC's consulting comes not only from large organizations but also from a number of small consultancies that feel they have been unfairly precluded from opportunities by OGC.

From a business perspective, consulting contracts are an expedient way for OGC to extend its influence without the encumbrances of their consensus-based process. They also can generate significant revenue.

OGC implies that they only advise clients on ways to make their existing or planned systems more interoperable using OGC specifications. However, after reviewing OGC marketing materials, proposals and products, it has become apparent that they offer a broad range of general IT and business development consulting services. For example, in one of the OGC consulting proposals I've seen, OGC proposes to assist in:

- Identification of strategic issues, risks and opportunities that may impact or assist [agency] in achieving its business vision.
- Identification of potential processes to mitigate risks.
- Advice on potential alliances or methods for [agency] to establish alliances with industry.
- Advice on potential OGC assistance in aligning vendor/industry interoperability activities with [agency] business developments.
- Review alignment of [agency's] technical infrastructure capabilities and broader government frameworks with [agency] business vision.

To me, this looks like a stock consulting situation.

Let us assume that this and other material that I have seen represents early experiments that grew beyond OGC's intent. Let us further assume that OGC can really restrict their consulting to their own expertise, OGC specifications. There are still at least five structural problems with any OGC consulting program.

1. OGC gains government consulting contracts, often on a non-competitive basis, because, at least in part, it purports to represent its members. However, OGC, like any consultant, is paid for a specific result. So, OGC must provide a specific solution or advice for each client. As part of their consulting service, OGC helps the client select one or more of OGC's members to provide expertise for the client. The conflict here is obvious and irremediable – OGC cannot represent all members and at the same time provide a solution or advice from one or a few of its members to a client.
2. OGC brings a select group of their member companies into the client's organization. To believe that these companies are not marketing their own solutions when significant dollars are at stake requires a carefully developed and incorruptible naiveté. This will always create the appearance of a conflict of interest.
3. Further, it is reasonable to expect that OGC, like any other consultant, will develop experience with specific partners and will rely on those partners more frequently than others. At best, OGC will continually have to resolve conflicts between the companies that implement OGC consulting projects and the competing interests of those that were not included.
4. As a consultant, OGC takes revenue that could go to a for-profit consulting firm. Those firms could be implementing OGC interoperability standards; however OGC preempts them from competition. Since success of any open standard depends on wide commercial acceptance, OGC's consulting activity can limit the commercial viability of its own standards. Further, "interoperability" consulting is what systems integrators and IT consultants do, so conflicts between these companies and OGC are inevitable.
5. The process of providing consulting services requires consulting staff and substantial revenue. If OGC's consulting practice is successful, they will become increasingly dependent on revenue provided by consulting clients. In any organization, keeping high-value clients happy is a top priority. So, it is reasonable to expect that consulting clients will have an increasing influence within OGC. This conflicts directly with OGC's successful consensus-based processes.

Select Members Have a Disproportionate Effect on OGC Direction

Many of the people I interviewed phrased this issue more succinctly as, "OGC sells influence." Sometimes they were much less polite. The angst here seems to stem from OGC's highly tiered membership and a widely held, but unrealistic, perception that OGC is a simple grass-roots philanthropy that not only facilitates geospatial standards but is also the keeper of higher ideals for geospatial benefit to humanity. However, I don't think that there are structural problems with OGC's tiered membership. In my opinion, the problem centers around the business case for investments in OGC.

Here's my take. OGC is like any other business. They have to have revenue, influence, and credibility to survive. OGC is a standards consortium. Standards consortia are about influencing standards. Many consortia like OGC have tiered memberships so that their clients can select and pay for the level of influence that the client wants over the standards process.

OGC, like many consortia, uses a tiered membership structure so that its clients can select the level of expense and influence that makes business sense to the client. At the low end of OGC's tier, an organization that just wants to go to meetings and watch will pay \$4,000. A voting technical committee membership is \$10,000. The price for a Principle membership is \$50,000 - that includes a vote in the planning committee.

For organizations that want more influence within OGC, there is Strategic membership. It is my understanding that at this level, the Strategic member negotiates a total price, which goes well past the \$50,000 for Principle membership. There does not appear to be any upper limit for a Strategic member's contribution.

Generally, the Strategic member dedicates one or more people full-time to OGC projects. At current loaded rates for professionals, the Strategic member pays at least two and perhaps many times what a Principle member pays. In return, the Strategic member gets commensurate influence over the standards process. While many smaller companies feel disadvantaged in tiered membership structures, there is nothing illegal or unethical going on – it is just business. (See www.consortiuminfo.org/evaluating/ for an interesting view of consortia membership from a business perspective.)

If there is a problem with OGC's membership levels it is about the business value of belonging to OGC. OGC pricing is high compared to similar standards consortia. Some companies and government agencies have pumped millions of dollars into OGC. OGC's pricing levels and the total investment that the geospatial community makes in OGC raises a question that is increasingly asked by companies that participate in standards bodies: What is the business value of belonging to OGC?

This is a business decision that only individual OGC clients can make. The business case depends on the extent of OGC's influence and how OGC brokers that influence. If OGC over-reaches its influence or loses credibility, then their business value diminishes.

OGC incurs a further risk with tiered membership levels and requisite influence brokering. To be effective, OGC must be perceived as representing the best interests of the whole geospatial community, users and vendors alike. So, OGC faces the obvious but very difficult challenge of balancing the broad interests of the geospatial community and the interests of its super-grade members that provide most of its revenue. OGC's Gordian problem is made knottier by its own consulting projects – projects that add revenue but operate outside of OGC's consensus-based standards process and involve inherent conflicts of interest.

OGC appears to have an increasing problem with its perceived business value. IBM dropped their Principle membership because they didn't see a business case. I've interviewed three other high-level members that are evaluating their memberships and say that they are likely to reduce their participation to the lowest level. To be

fair, some of the companies I've interviewed are very happy with their OGC investments and enthusiastically plan to continue them.

Perhaps this potential membership churn simply reflects difficult economic conditions, but the people I interviewed did express specific concerns with OGC's business value.

In any case, OGC needs to think through their real business value and present a clear business case to their constituents.

Some members and non-members are confused and frustrated by OGC's decision and conflict resolution processes

First, the consensus process for standards isn't part of the problem. Most people say they have adequate information about that. This problem appears to center on the many other OGC decisions that affect members and non-members – like how consulting contracts are solicited and awarded, how OGC funds are spent, or what the Strategic Advisory Committee and Board of Directors decide. Further, some members feel that they do not have an effective way to influence OGC decisions that conflict with the member's interests.

OGC decision processes, outside of the consensus process for standards, are inscrutable to an outsider. Decisions may involve the Planning Committee, Board of Directors, Strategic Advisory Committee the OGC executive staff, or some ad hoc combination. OGC holds their financial data very closely. Benefits for upper-level members are apparently negotiated directly with OGC's executives. As far as I can tell, small ad hoc groups or individuals, largely without review, make many important OGC decisions.

Now, there are a lot of very good reasons to keep corporate dealings secret. But when secrecy is used excessively or members feel that their concerns about decisions are ignored, any organization will eventually run into trouble.

Here is one hard fact about human nature: without credible information, people will make up their own stories. If people sense any hint of conflict with their own interests, they will assume the very worst and act accordingly.

So, the problem is not that OGC is hiding anything. As I understand it, the issue is that some members do not understand some OGC decisions and those members feel that their concerns are ignored. Four OGC members that I interviewed said basically the same thing, "When we went to OGC with [a problem], we were ignored. When we persisted, we were rebuffed." Another OGC member simply said, "OGC has become arrogant."

Some of this is normal. Members grouse about any organization's decisions from time to time. But in this case, the complaints were surprisingly consistent and about the same issue, OGC consulting. The members' reaction was also consistent, they are angry and frustrated.

OGC may be able to address what appears to be a chronic perception problem by simply making their decision processes and financials more public. But OGC needs to realize that they have grown to the point that what they do affects people beyond their inner circles. Unless OGC engages all the people they affect openly and effectively, they will be regarded skeptically and eventually discredited. This predictable phenomenon motivates government agencies to hold hearings before they implement policies affecting their constituents.

Public hearings may not be the right course for OGC, but their current secrecy and conflict resolution policies are apparently causing them problems.

"OGC Conformance" is used by some members to imply "interoperability"

It seems to me that OGC defines "OGC Conformance" clearly. About twelve months ago, OGC members said that they wanted to tighten the criteria for "OGC Compliance" and they got to work. Their efforts are paying off now with tighter conformance testing and even automated testing tools. So today, when a company states that they are "OGC Compliant" with a particular OGC specification that means that they have successfully performed a compliance test. Arguably, OGC's conformance testing carries the highest business value of any of their activities.

The problem arises when companies market their "OGC Conformance" as proof of their "interoperability." This is a misleading claim. Interoperability is a broad concept that has to do with information system components working together effectively. In practice, interoperability can only be achieved within a given information system in support of a specified set of business processes. Achieving interoperability requires careful design and continuing realignment of the information system with changing business objectives and external factors. Standards are an important aspect of interoperability, but not sufficient to achieve it.

While this is a sore point for many OGC members, I will point out that "standard" technology for many highly interoperable information systems comes from single vendors. For example, single-vendor technologies like Microsoft's Windows/ .NET; IBM's Websphere; and Oracle's platforms are central to many, if not most, enterprise information systems. These platforms achieved commercial success, in part, by providing a broad single-vendor solution. Within the information systems supported by these single-vendor platforms, standardization is provided largely by a single vendor. External linkages are provided by broad IT standards like XML, SQL and SOAP. Many industry standards are established after the fact of broad commercial acceptance. The point here is that the "openness" or source of a standard has less to do with interoperability than the depth of commercial acceptance for the standard, regardless of whether the standard was developed through community consensus or vendor success.

So, the adage, "Standards lead to interoperability" is true, but so is, "Interoperability leads to standards", and also, "Commercial success leads to standards." OGC needs to consider all of these verities in their long-term strategy.

OGC is perceived as using its position to impede ESRI

Four high-level OGC members that I interviewed were direct. The statement "Preventing ESRI from becoming a monopoly is a standards issue", summarizes their position. One OGC consulting client said, "I want OGC in here to keep ESRI from dominating the procurement process." This is a marketing jihad, not a standards issue.

One senior manager in a large government procurement organization stated, "I've received a number of complaints that OGC routinely tells their prospects and members that they [OGC] are the only effective way to stop ESRI. They have also recommended that the government procure other member's products rather than ESRI's. I think that the extent of OGC's activity in this area is a conflict of interest for OGC." This situation endangers OGC's funding from government agencies.

When individual OGC members bash ESRI it is normal competition. When OGC is involved, it is a clear conflict of interest and has serious anti-trust implications.

Further, it is bad business for at least two reasons. First, to be effective as a standards organization, OGC has to be perceived as unbiased. If they are seen as biased against one of their members, their credibility and business value are diminished. Second, if OGC predicates a substantial part of their business value on their ability to reduce ESRI's effectiveness and they either fail to deliver or they attract the attention of regulators, their business value will decline sharply.

The deeper conflict is obvious. OGC and some of its members apparently want both open standards and to diminish ESRI's influence. The two objectives are mutually exclusive. If, under pressure from some of its members, OGC pursues the objective of diminishing ESRI's influence, their valuable progress toward standards will likely be lost.

Discussion points

In my opinion, OGC needs to consider the following discussion points as they and their members evaluate OGC's strategies, policies and programs.

1. OGC's consensus-based standards process works well and is highly respected.
2. The geospatial industry needs an organization like OGC to facilitate industry standards. OGC has accomplished a lot through by facilitating and leading the consensus-based standards process.
3. No matter how it is spun, OGC's consulting business is going to continue to cause problems. Their consulting role fundamentally conflicts with their role as a consensus-based standards organization. If OGC continues down the consulting path, we will see the GOS controversy repeated until OGC is rendered ineffective as a standards body.
4. OGC needs to focus on the business value they can bring to their members rather than the short-term revenue that that they can generate for themselves.
5. OGC needs to be more open about its actions and financials. Their current decision processes are obscure and lack vigorous independent review. They also need to examine their conflict resolution processes. Apparently, at least a few members are frustrated enough by their inability to affect change within OGC to the point of leaving.
6. OGC and its members have to find a way to disconnect "OGC Conformance" from "interoperability," and marketing the OGC specifications from the specifications development process.
7. OGC has to find a way to avoid being involved in ESRI-bashing on behalf of their members. In my opinion, OGC has to be seen as an unbiased standards group. OGC members must refrain from involving OGC in their individual or collective competitive fights.

The key question that arises from all of this is, can OGC remain a successful consensus-based standards body or will they eventually be seen as ineffective and a poor business investment for their members? The tipping point between those outcomes is hidden somewhere along the path that OGC must walk as our industry heads toward maturity and new markets.

Hopefully, the people who have an interest in the health of the geospatial industry will work through these highly charged topics and open a frank, public discussion – a discussion that will eventually facilitate a healthy and progressive standards organization for our industry.