State of the Art

The very first map that was drawn was probably scratched out with a stick in the dust or mud. A long time ago, primitive hunters chasing large mammals or warriors on a warpath probably drew some rough sketches in the dirt as part of their game plan. They made those primitive scribbling's to describe where they were and where the enemy or the game was. The idea was simple. Here's where we are, there's where they are. We are going to do this.

Over the years, map production has increased into sophistication by many orders of magnitude. Yet, in many cases fire officers are often faced with a very limited use of maps in helping them do a better job of fighting fires. Sometimes, the amount of information on the printed map is not much better than the lines etched on the ground. It is often very difficult to see under some emergency conditions and its is almost always out of date.

That's too bad, because there is a technology that can significantly improve upon that scenario. It goes by the acronym: GIS.

Geographical Information Systems are not really a new idea. In fact, one can go back about 100 years ago to observe the first efforts to convert fact into visual representation in the fire service. The example was called "Sanborn" Maps. These were detailed, hand drawn maps that were completed by the Sanborn Company to help identify a community fire problem. If you have ever seen one of these maps they are like a work of art. In fact, they were state of the art at the turn of the century. That's a key concept except the emphasis ought to be on the word state and not on the word art. State implies that the present condition is current for now – right now. Art is in the eye of the beholder.

The state of the art today for mapping is vastly superior to that technology, yet there is a troublesome aspect on examining the condition of most departments with respect to how much access they have for the state of the art. The first is that not everyone has access to GIS. There are many fire agencies that could benefit tremendously from the use of GIS, but they have not moved to acquire it for its use.

There are a lot of reasons for that consideration. Let me suggest that there is one very good reason that this condition needs to go away. That reason is the need for a universal, professionally validated means of sharing data and resources across a nationwide landscape. We need a system of mapping that can meet the challenge of providing the fire service with information to deal with disasters that range from community based, low frequency, high consequence events, through to region wide, catastrophic events that are multi-jurisdictional, multi-community, and even multi-state. Does the idea of "singing from the same sheet of music" sound like a good idea?

Some of the readers of this article will immediately recognize that this is a daunting task. It's not going to happen right away, even if we wanted it to. But, it will never happen if the fire service does not provide support and be a willing contributor to the process. It may happen without fire service interests in mind if any other element of public safety takes the leadership role in establishing that system.

In contemplating the article, I asked myself five questions. They are as follows:

1.   How many fire agencies in the country do not know about GIS, nor do they visualize how it can assist them in being more effective as an emergency responder?
2.   How many fire agencies know about GIS and interested in how it can be of assistance to them, but lack staff and funds to become engaged?
3.   How many agencies are in the process of justifying and advocating that they obtain the necessary capacity to perform GIS at the local level?
4.   How many fire agencies have the capacity to perform GIS and are training internal staff to execute basic usage?
5.   How many fire agencies have gone beyond their own departments needs and have engaged the entire authority having jurisdiction into an entrepreneurial approach to prepare the entire community for the next emergency operation event?

Well, I will be the first to admit I'm not really sure of the number. My intuition tells me that if I created some categories on a bar chart it would look something like this:
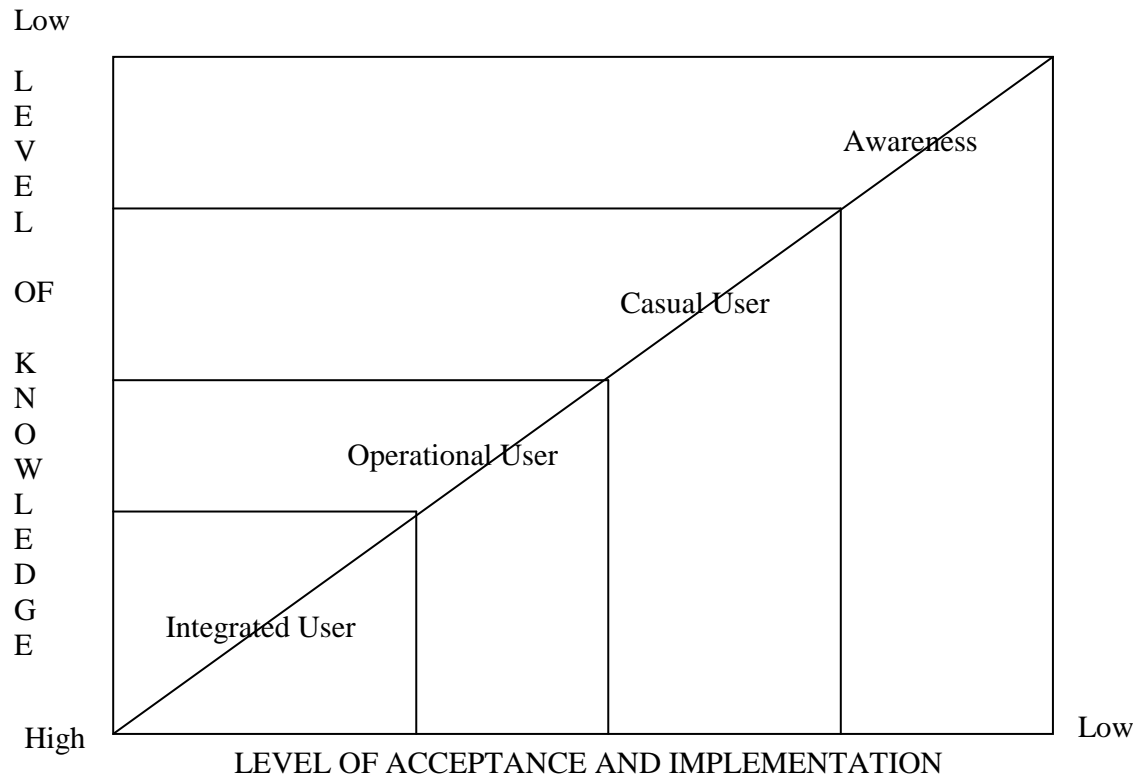
This chart reflects that if there is a low knowledge level and low acceptance level there are more people that fit into this category than any other. It follows that if the knowledge level increases and the level of acceptance increases this group will be smaller. As the knowledge level increases and the acceptance level increases there is appoint in which a small number of people that are enjoying the fruits of the tree of knowledge.

What is interesting to me about that chart is that it is a chart that parallels the innovation, adoption and adaption curve model of change. Almost all new new technology in our industry has gone through the same process. Plug in anything you want, i.e. residential sprinklers, incident command systems in the 1970's, fire prevention programs, and so forth. The terms early adopter, mainstream and late adopter can fit right into this model - That phenomenon is not very new either.

As you are reading this just think of a few influences in your life that are going on in this very area. Can you remember the first time you heard of a GPS device? Have you seen an advertisement for a GPS Device? Have you seen anyone driving a car that has one built in? Have you ever gone to MapQuest to get directions? Have you ever purchased or rented one. In each case you were moving in the model from being unaware to a level of acceptance. If it can happen to you as person, what about the profession?

What the chart points out is the fact that every department fits into one of those categories. That poses a question to you, the reader. Where is your department in that profile right now? The next question is; over the next five years what can you do to become more engaged in the process to change your position on the chart? Or, maybe a better question might be; where will your organization be if it doesn't acquire a role in establishing the GIS approach to the field of public software?

If you were to ask law enforcement where they are on the chart, you might be surprised to find more acceptance of GIS. If you were to involve yourself with the military you would soon discover its becoming a way of life for them.

The fire service needs to become more engaged if it is to be a viable part of the decision making process in the future. Furthermore, there is a really good reason why we should be in the leadership role in the arena. The fire service is one of the most closely connected services with what's really on the ground. Fire stations are the most readily available, broadly distributed public safety infrastructure asset. The fire service is "ground-truthed" to the maximum.

Many fire officers have received their basic orientation to GIS through the concept of Standards of Cover. Initially, the use of GIS was directed to evaluate fire stations. That was fire at the outset, but the concept of using GIS for a much broader context is now occurring. One of the phases that fit this discussion is the idea that GIS is regarding becoming the "spreadsheet" of emergency services.

The challenge for the fire service is the next five years is to become more heavily engaged in the development of a system that serves our needs and simultaneously serves the interests of our communities and our cooperating and allied agencies. In short, we can ultimately lead the way in becoming one of the activists because someone is going to make the GIS function that is fundamental to the control of decision processes within the emergency services system.

A bold step in the direction has been taken by the IAFC recently. The IAFC has formed a technology advisory council that is exploring the various ways and means of increasing the rate at which technology is accepted in our profession. One consideration you may wish to give to where you are on the 5 point scale of integration is to become more knowledgeable about that technical council.

In the meantime, there are a series of steps you should be taking to determine exactly where you and your agency are with respect to being engage in the field. These steps can be taken by any agency, at any level, and are incrementally more difficult to achieve. They are non-judgmental, in that the answers are not as important as the process of engagement. Here we go:

1.   What do you know about GIS?
2.   Where can you go to learn more about GIS?

3. How familiar are you with commercial GIS products such as Map Quest and Google?

4. Do you know of any agency in your *county* that is using GIS? Check with planning, Sheriff Department.

5. Do you know any agency in your *jurisdiction* that is currently using GIS? Check with planning, law enforcement.

6. Do you know of any fire agency in your county that has deployed any provisions of GIS? Check with entities who have conducted SOC studies.

7. Do you know of any fire agency or a statewide bureau that have deployed GIS?

8. Do you know of any wildland fire agency with your state that has deployed GIS? Check with Fire Safe Councils.

9. Have you or a member of your staff attended a workshop or seminar on the use of GIS?

10. Have you or any member of your staff conducted a review of internet resources that describe or define GIS applications?

If your answer to all of the questions is no, there is no doubt where you and your department is positioned in the suggested model. If you have some yes's and some no's, the degree of action you took after obtaining a yes on the question will likely create a sense of direction for you and your department.

In the world of strategic planning, challenges are often closely linked to opportunities. If you take one of the challenges suggested by the 10 questions, the opportunity for your department to find itself in the mainstream becomes much more likely. Those who were early adopters of GIS have already paid the price of knocking off the really rough edges off the adaptation process. This does not mean that there will not be issues associated with the next generation of users, but it does mean that we have the possibility of becoming a powerful influence over the process of decision making when more fire agencies become involved.

The state of the art awaits your participation.