Criteria to Consider When Selecting a Respond & Rescue Logistics Solution

First responders, emergency workers, and the logisticians who support them face enormous challenges dealing with the aftermath of natural and/or man-made disasters. When called into action, these hard-working people are confronted with situations where infrastructure is damaged, communications may be destroyed, victims are without shelter, and the basic necessities of life…food, water, heating oil, gasoline are in short supply.

To help victims of disaster and restore the basic infrastructure, emergency personnel and first responders have to be logistics miracle workers—moving critical assets rapidly with little to no notice. When the logistics don't work, it's a nightmare. Unfortunately, even the best-laid plans to mitigate the impact of disasters can be challenged by the unexpected. Take Hurricane Sandy as an example—it was a storm surge that weather experts had never seen before causing enormous destruction:

- 37,000 primary residences destroyed or damaged
- 8.7 million cubic yards of debris left behind
- 2.7 million people without power

To be prepared to deal with the unexpected and unforeseen, the first responder community needs a logistics solution that is fast, effective and highly flexible in order to save lives. Critical resources can be augmented efficiently and ultimately return the affected areas to normalcy.

Criteria When Evaluating a Respond and Rescue Logistics Solution

When evaluating a respond and rescue logistics solution, there are a number of key criteria including accessibility, quality & level of detail provided, alerting capabilities, Key Performance Indicators (KPIs), integration with other systems and the solution's underlying technology. The ideal system should also offer predictive capabilities. Each of these key criteria is discussed in detail below.

Accessibility

When performing rescue work in a highly devastated area, you need a solution that will work anywhere regardless of the health or status of the infrastructure of the affected

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area. As a result, the right solution should enable you to quickly locate critical assets such as generators, communications equipment, supplies, etc.—no matter if they are located within a few miles of the impacted area, across the country or on the other side of the world. Importantly, you not only need to locate those vital assets, but also you need to know the condition of those assets. As a result, you'll want a solution that allows you to identify whether the assets are serviceable and in deployment-ready condition, so you can monitor them, in real time, throughout their deployment, usage, and re-deployment.

In addition to the ideal respond and rescue solution working in any location, it also should be easily accessible by first responders and the logisticians that support them, whether they are on-site or based in headquarters many miles away. Therefore, you'll need a solution that can be accessed over a browser using a variety of devices—computer, tablet or Smartphone—no matter the users' location. When you combine those two factors—accessibility regardless of location and technology used to access it—you will have a solution that's capable of effectively supporting the most challenging scenarios.

Quality & Level of Detail Provided

Being able to access your solution isn't going to help your respond and rescue efforts if the quality of information is poor. This leads to the next criteria when selecting a solution: the quality and level of detail provided by the application. Everyone is familiar with the phrase "garbage in, garbage out" but what if your solution (so to speak) doesn't provide any garbage (information) at all? That is the exact problem with many solutions on the market: you go into the application to locate a specific asset, the screen informs you of the asset's location, you contact the using owner to pull the item from where it is supposed to be, and it's not there. In normal circumstances, this incorrect information would be annoying and cost you time finding assets; when you're dealing with a crisis, incorrect information could result in lost lives.

This challenge illustrates why you need a respond and rescue solution that provides real-time actual information—not "point in time" information that is dated. The right solution is one that provides detail as to where your assets actually are at the precise moment you need them. If those assets are in-transit, the system should show you know, on a map, where those in-transit items are as well as expected arrival time. Further, the system you select should be able to provide detailed historic information on the asset: when was it last used? When was it originally purchased? When was the last time it was serviced? If looking for information on supplies, are they expired, nearing the end of their shelf life, or safe for consumption? That level of detail is necessary so you not only find out exactly where your assets and supplies are, but also details on their condition.

Alerting

In times of disaster, first responders and their support team handle many moving pieces. As a result, it can be extremely difficult to keep track of every single activity and its associated status. Since there are so many activities occurring at once, wouldn't it be great if your respond and rescue solution alerted you when something goes wrong—allowing you to focus just on the areas needing attention? Basically, wouldn't it be great to know what's broken and what isn't?

This question goes beyond multi-tasking. When there are precious few minutes to react, knowing that something is askew immediately is important so you can adjust and prevent what may be a minor issue from becoming a major catastrophe. Whether the issue is a truck in the wrong place or precious supplies have been tampered with, the ideal respond and rescue solution needs to alert you when something goes wrong and/or action is required.

You may be thinking, "Sounds great, but how can an application know when something is wrong, much less who to inform about the issue?" Simple! Closely tied with any alerting capability is **configurability**. The ideal solution should be configurable so you can set the parameters for what's working and what isn't. For example, let's suppose a supply truck is supposed to arrive at the emergency site in 60 minutes and any later than 90 minutes is a problem. The ideal solution should let you set that parameter—send out an alert if a specific asset (in this case, the supply truck) will take longer than 90 minutes to arrive on site. In addition to allowing users to set the threshold for defining a problem or what is "alert worthy," the system should also allow you to choose whom to alert. Let's go back to the supply truck example. When the initial time parameter is set, you should also be able to add 'notify John Doe and Bob Smith' if the truck will take longer than 90 minutes.

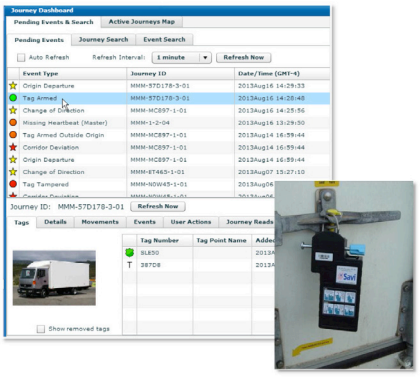
The ideal respond and rescue logistics solution will provide you with effective business intelligence to assess what's going on now, in real time, as well as providing operational intelligence to predict future outcomes based on historical data.

KPIs and Visualizations

For managers and others overseeing multiple activities, it can be difficult to gauge if everything is working correctly. This need goes a step further than "where is my supply truck with generators?" to a broader, aggregate understanding of the health of the overall respond and rescue operation. Knowing this information typically requires contacting leads for each aspect of the initiative; however, this approach is not only inefficient, but also takes up valuable time (would you rather the first responders spend time on the phone with management, or spend that time on actual rescue activities?).

To address this challenge, the right respond and rescue logistics solution should give you a visual "snapshot" of the health of your initiative. Ideally, this information would be delivered in the form of a dashboard with Key Performance Indicators (KPIs), so it's easy to quickly see the overall status of your respond and rescue effort. The old saying 'a picture is worth a thousand words' in absolutely true, only in this case a dashboard also saves you from making dozens of phone calls to get status updates. With this kind of visualization—having lots of data points served up on one screen--you can manage all of the data and synthesize it into usable information.

Integration with Other Systems



No one system or application can "do everything," which is why many large-scale federal Enterprise Resources Planning (ERP) implementations fail. These seven-, eight- or even nine-figure implementations try to solve every problem an organization may face in one single solution. Unfortunately, no matter what some technology and software vendors may tell you, no one piece of technology can do everything. So when looking for a respond and rescue logistics solution, don't be distracted or fooled into thinking otherwise.

Instead of looking for that magic piece of code, focus on a logistics solution that addresses your specific "respond and rescue" needs—with one critical caveat: the solution should be designed to integrate with other systems. The ideal solution should quickly & easily integrate into your technology environment, share critical information with other systems, and make sure vital information isn't stored in inaccessible silos.

When it comes to integration for respond and rescue solutions, it's not just about integrating with other applications like ERP or Warehouse Management. It's also about integrating with **RF-ITV**[1], or **"Radio Frequency In-Transit Visibility."** Built for the U.S. Department of Defense, RF-ITV tracks materiel in-transit so its exact location can be pinpointed. Basically the system is designed to provide Total Asset Visibility (TAV) by tracking items in the logistics pipeline and ensuring they arrive at the correct destination. Why is integration with RF-ITV so important? Because when major disaster strikes, many government agencies require the support and combined synergies with the DoD and other federal agencies to assist in the rescue efforts. When your respond and rescue solution provides this capability, it is vital that workers and first responders receive complete visibility, comprehensive command and control, and easy coordination for agencies that have identified DoD resources as part of their plans.

Technology Agnostic

While the previous section was internally focused—the ability to share and move information throughout your IT stack—this section addresses an externally focused need. To know exactly where an asset is located, the easiest way is to apply a tracking "tag." This tag can be a small GPS tracking device that attaches directly to an asset, or be a more comprehensive tag that monitors location as well as temperature, shock, humidity, etc. of an entire shipment. Depending on your needs, different types of "tag" technology should be used. For example, in an enclosed warehouse space RFID may be the right tracking solution, while cargo transported across an ocean may be better suited for satellite technology. Net-net, the point is that no one single tag type is "the best"—it's entirely relative to your use case and needs.

With those varied needs, it's not uncommon for organizations to use multiple tag types that leverage different technology. However, when it comes to reading data from those tags, many applications are only able to ingest data from one specific tag type—active RFID, passive RFID, GPRS, barcode, etc. Since it is highly likely that respond and rescue related assets will require different types of tags, the ideal solution should be able to read (ingest) data from any tag, not just for only one specific tag type.

[1] For more information on RF-ITV, please visit http://www.ait.army.mil/RF-ITV/rf-itv.html

Predictive Capabilities

So far in this whitepaper, the selection criteria have involved historical asset information, "sense and respond" capabilities to alert you to what is happening right now, and technology. A newer criterion available due to the advent of "Big Data" is predictive capabilities. Predictive capabilities rely on real-time information and historical data to help you arrive at better planning decisions—helping to avoid potential pitfalls in the first place. As a result, you can quickly answer questions such as: How well are my assets being utilized? Which assets need maintenance? Is my fleet operating safely? Did I procure too much or too little? Are we sufficiently prepared for the next emergency? Therefore, you can continue to evolve your planning by learning from historical data, be smarter and prevent issues before they occur.

Conclusion

There are many important things to consider when evaluating a respond and rescue logistics solution. Some of the criteria are technology based—the system's ability to work with different applications and types of tags. Other capabilities to consider include accessibility and information quality. Lastly as mentioned above, the ideal respond and rescue logistics solution will provide you with effective business intelligence to assess what's going on now, in real time, as well as providing operational intelligence to predict future outcomes based on historical data. When you combine these elements, you have a recipe for a solution that will help you manage the challenging logistics of emergency management. Good luck!

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About Savi

Savi Technology provides organizations with operational analytics – the ability to collect and convert operational information into useful knowledge – from physical objects like supplies, equipment and cargo. The Savi Sensor Based Analytics Platform gives enterprises the ability to access, analyze and learn from new data in ways previously impossible, yielding streamlined operations, enhanced security and dramatically improved enterprise decision-making. Savi is headquartered in Alexandria, VA, with operations in Lexington, KY and around the world. Savi was named a 2013 Computerworld Honors Laureate for the economic improvements its technology has provided to several countries in Africa. Savi has more than 100 domestic and foreign issued patents covering a variety of technologies and is an active participant in several industry standards bodies including ISO 18000-7. For more information visit www.savi.com.