8 Elements of a Good Common Operating Picture

For Emergency Management:

A List of Questions to Ask When Evaluating Your COP for Emergency Management

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There are many questions that can be asked when you are evaluating your common operating picture (COP) for emergency management. They all start with asking why the need to evaluate in the first place. It may be that you have an existing COP and you want to explore if it is doing what it's supposed to do, or it might be that you don't have one at all and need to figure out if you need one and/or where you might fit in to one that someone else is managing.

Innomergence Solutions is happy to share some fairly high-level questions that you can ask to help you focus in on your conclusions. They are grouped into one of eight categories that generally represent the elements of a good COP. The eight categories are:

- Spatial Display
- Good Situational Awareness Sharing
- Distributed Field Data Collection
- Utilization
- Automation
- Data Standards
- Data Aggregation
- Operations

When you answer the following questions, consider doing a quick run through yourself first to help you get a sense of where you are with your knowledge of your organizational COP for emergency management, and how these questions might flow when you take them to a group. Feel free to add, delete or modify as you see fit. They should get you pointed in the right direction.

If your organization is very active in more than one of the four pillars of emergency management, you may want to consider applying the questions to each one separately with the appropriate group of people. The four pillars are:

- Preparedness
- Response
- Recovery
- Mitigation

These first two general questions can help you identify whether or not you have, or are part of, a common operating picture for emergency management.

1. Does our organization openly promote the use of a common operating picture for emergency management?
2. If the answer is YES, what is it called?
   - Does it have a commercial name from the vendor and/or some meaningful acronym?
   - Who developed it and/or sold it to our organization?
   - When was it first implemented?
   - When was the last update?

If you answered YES to question # 1 then complete the rest of the questions below.

If you answered NO, do you feel you need one? If so, why? Consider completing the questions below to help you get a better idea of what a COP might look like for your organization and help you answer the "why" question with a bit more rigour.

Spatial Display

3. Does our COP have a map based spatial display?
   - If so, does it display the information we need to see?
   - What information is missing and where can we get it? Who owns that data?
4. If there is a spatial display component, who designed the map engine?
   - Is it a common GIS tool?
   - Is it Google Maps, Bing or some other free mapping tool?
   - Is it proprietary and/or custom designed just for our organization?
   - Do any of our partner agencies use it?
5. Does our COP have a user dashboard?
   - If so, does it display the information we need to see?
   - What information is missing and where can we get it? Who owns that data?
   - Can the user customize the dashboard to meet his or her own needs?
6. Can we generate a basic map for printing without the need for a technician?
7. Can we generate a map file that can easily be sent by email, text, or dropped in a file sharing site without the need for a technician?
8. Can we generate a geo-referenced map for export into other mapping tools without the need for a technician?

Good Situational Awareness Sharing

9. Is our organization part of a COP managed by a higher-level government agency?
   - If so, what is that agency and do we have a legal reason and/or formal agreement to participate?
   - Do they send us information, do we send them information, or both?
   - In what format and how often do we send or receive it? Is everybody happy with that?
10. What agencies and organizations are formally part of our COP network? Make a list.
   - Do they send us information, do we send them information, or both?
   - In what format and how often do we send or receive it? Is everybody happy with that?
11. Do we have a formal process for receiving information, analyzing it, and converting it in to actionable intelligence?
   - Does it feed in to a process for timely critical decision making?
   - Does it feed in to a process for strategic planning?
   - Does it have a process for assessing suitability and confidentiality before being released to partner agencies and the public?
   - Does it have a process for authorization or approval of content for release to partner agencies and the public?
   - Are there "need to know" security protocols in place for sharing with and viewing by partner agencies?
   - Are there security protocols in place to deal with unauthorized sharing and viewing?

12. Once approved for release, how is the information released to the authorized parties?
    - Is it compatible with existing partner agency systems or do they need some specialized technology to view?
13. In the last 6 after action reviews, hot washes, and/or event debriefs, has there been any critiques and/or new practices recommended to improve on situational awareness?
    - What are those recommendations?
    - Can those recommendations be implemented in to our existing COP?
14. Does our COP provide data in to a public warning or notification system?
    - If yes, what types of emergency events are informed by our COP?
    - What types of events doesn't it inform?

Distributed Field Data Collection

15. Can data be collected from the field in real time or near real time?
16. Do the devices used in the field need to be connected to the internet, cellular, wifi or some dedicated network, or can they be used off-line until connectivity is available?
17. Is the field data collection device-agnostic or does it require specialized or dedicated hardware and/or devices?
    - If specialized or dedicated devices are required, what is the cost to purchase?
    - If specialized or dedicated devices are required, what is the cost keep them active per year? (licensing, connectivity, lease etc.)
    - If device-agnostic, are there appropriate security measures in place for field connectivity and use?
18. Are the forms or user interfaces accessible through common web browsers or do they require dedicated software or applications on the field devices, or both?
19. Is the data collected in the field by a dedicated or specially trained team of personnel from our agency or is the collection distributed out to a number of partner agencies?
20. Does field data collection rely on a number of "canned" forms or can we develop a custom form on the fly to meet a unique information need?
    - If there is the ability to develop a custom form on the fly, does it require a technical specialist and if so, how long does that take?

Utilization

21. Is the COP tool used every day by several or many people, or is it only used when major events occur?
22. Does the COP tool required lengthy or specialized training to use, or is it self-guided?
23. Do the COP users consider it intuitive and easy to use?
    - If not, what are the major challenges they identify that make it more difficult to use?
24. Is there chronological capture and logging of critical events, decisions, and actions?
    - Is the content easily searchable and retrievable by keyword or tag?

Automation

25. Does the COP tool automate regular daily situation reports or is it a manual process?
26. Are there any daily or regular practices that are currently manual and/or involving paper forms and/or spreadsheets that could be automated? If so, what are they?

Data Standards

27. Does our main COP tool support common data exchange standards for emergency management?
    - Does it support any of the Emergency Data Exchange Language (EDXL) suite? If so, which one(s)?
    - Does it support the National Information Exchange Model (NIEM)?
    - Does it support any other data exchange standards for emergency management? If so, what are they?
28. Is our tool based on a higher level common critical information requirements (CIR) and/or essential elements of information (EEI) model as defined by FEMA or some other large (inter)national emergency management organization?
29. Does our tool support any other domain specific data standards that are defined through (inter)national or regional agreements? If so, what are they?

Data Aggregation

30. Does our COP pull data automatically or does it require someone to manually upload it from a number of different types of systems such as weather networks, web cams, or emergency dispatch or reporting systems?
    - If automatic data pulls, what are the types and sources?
    - Are there any other types of data that we would like to see our COP automatically connected to?
31. Does our main COP tool publish an application programming interface (API)?
32. How is our COP set up?
    - Is our COP a consumer-off-the-shelf (COTS) product specifically for emergency management?
    - Is our COP a group of COTS products that are electronically connected and automatically share information between the different elements of the system?
    - Is our COP based on common computer tools such as MS Office only?
    - If it doesn't fit one of the previous three descriptions, what does it look like exactly?
    - Do we consider it a "system of systems"?

33. Can the data from the different sources be combined in our COP system for import in to other tools such as spreadsheets, spatial modelling, or statistical analysis?
34. Is the data generated by our COP clean enough to be used for artificial or augmented intelligence applications?

Operations

35. Do we pay a standard license or user fee?
    - If so, what does that cost our organization per year?
36. Do we pay an additional maintenance fee? If so, what does that cost us per year?
37. Do we pay the vendor and/or consultants to do custom development work? If so, what does that cost us per year?
38. Do we pay the vendor and/or consultants to deliver training? If so, what does that cost us per year?
39. Are there any other hidden or fixed organizational costs associated with running the COP and if so what are they and how much does that cost us per year?
40. Is the COP housed on servers internal to our organization?
    - Are they dedicated or shared servers?
    - Are they cloud based?
    - Is there redundant back up, universal surge protection, and alternative power generation?
    - If so, what is the cost to procure and support the servers per year?
41. Do we have dedicated staff technicians and/or managers to keep the system running daily?
    - If so, what does that cost us in wages and benefits per year?
42. Do our COP system and dedicated staff require a dedicated facility to house and run it?
    - If so, what is the cost of that facility per year?
43. Can our COP tool be accessed from personal or work-owned mobile devices?
44. Can our COP tool be accessed from home or anywhere on the internet?
45. In the event that our Emergency Operations Centre is compromised, can it be managed remotely using the COP system?
46. Does our COP tool require constant connectivity to an internal network or the internet, or can it be run off-line for a period of time?
    - If it can be run off-line for a period of time, how long is that?
    - If it can be run off-line for a period of time, what could cause it to go down and what safeguards are in place to prevent that?
    - Does our organization have a formal recovery plan in place for our COP?

Kudos to you for recognizing the need to revisit your role in a larger common operating picture for emergency management. Serving people is what we all do. We all work together collectively to improve on how we provide that service.

And thank you for considering these questions. They are intended to get you thinking about your need for, and/or role in, a common operating picture for emergency management. We hope that you have found them of some value, and that they will help get you started on some good meaningful dialogue and innovative thinking.

At Innomergence Solutions, we use these and other questions when looking at technology and systems that support emergency management. They can lead to some pretty interesting and insightful conversations about the current and future states of emergency management.

Technology is changing at staggering speeds, and many applications are coming to market that can enable affordable common operating pictures for emergency management for participation at all levels in all types and sizes of organizations. Fundamental to this will be the Internet of Things (IoT), artificial intelligence (AI), big data, and the idea of a "system of systems" where many smaller systems that do a few things really well are all connected to contribute to a larger common operating picture for emergency management. Many of the older existing emergency management systems and tools were not originally designed with that systems interoperability in mind, and they have been challenged to keep up. Often, this has been at your expense.

At Innomergence Solutions, we believe that all organizations should be equal in emergency management, and that better information sharing for situational awareness will make you that equal. If you want to understand a bit more about what we think and do, please come visit us at:

www.innomergence.com

If you would like to share your thoughts, advice, or guidance with a larger community that is trying to make the emergency management world a better place through the use of new and enabling technologies, come visit us regularly at:

https://www.facebook.com/innomergence/

Thanks again.

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