

Hospital Alerting

Smartphones?

...or **SPARKGAP** Acknowledgment Paging?

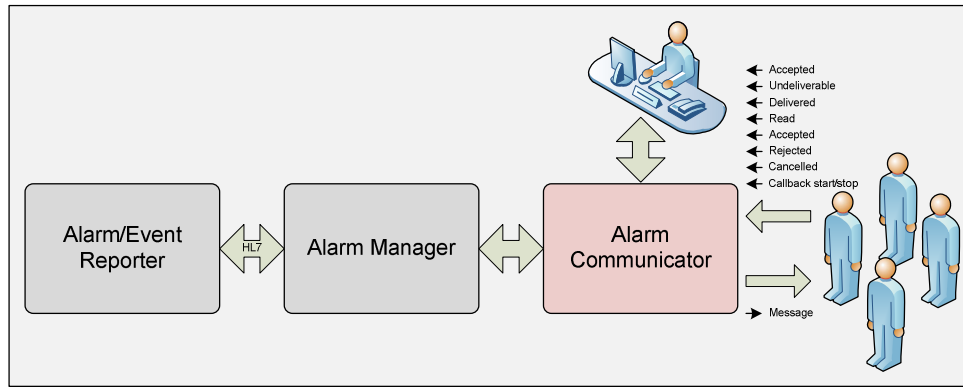
*Smartphones are pervasive and have many exciting capabilities...but they are not suitable for code alerts, patient care alerts, urgent HL7 alerts, or other urgent time-critical messages. In contrast, a **SPARKGAP** system delivers time-critical messages within 5 seconds, and without unexpected delays. Once installed, **SPARKGAP** can also meet many other communications needs simultaneously and therefore save money across the hospital enterprise.*

Version 1.1

Critical Response System, Inc.
1670 Oakbrook Drive, Suite 370
Norcross, GA 300093-1849
770-441-9559
www.criticalresponse.com

ALERTING AND THE HL7 MODEL

In the hospital, life-critical situations are detected every day by patient care devices, clinical personnel, and even patient themselves as well as their families and other visitors. These situations often require an urgent response by clinical personnel. In the **HL7** model, the **Alarm Communicator** notifies clinicians and response groups, converting HL7 alerts into urgent messages specific to the types of communication devices in use.



Traditionally, for life-critical alerts, the **Alarm Communicator** role is provided by a dedicated hospital paging system. Such systems are simple, fast, and reliable. However, the HL7 model requires detailed feedback of when the message is received and read by the recipient, and how the recipient will respond. One-way paging systems cannot provide this information, so hospitals are forced to look into newer technologies to fill this role.

Smartphone service and the **SPARKGAP** acknowledgement paging system are two such potential solutions. Smartphones are marvels of modern technology that bring the Internet to mobile users. **SPARKGAP** is a narrowband digital 900MHz acknowledged paging and short messaging system. It is difficult to compare the two solutions; they are completely different technologies that serve different purposes. But when it comes to critical hospital messaging, the **SPARKGAP** system reigns supreme in terms of **performance, reliability, cost, productivity, and accountability.**

PERFORMANCE

A **SPARKGAP** system has one sole purpose: fast, confirmed delivery of critical messages to hospital personnel. A **SPARKGAP** system delivers a critical message to one recipient or hundreds of recipients within 5 seconds, even if messages are several hundred characters long. It does not matter what other traffic is happening with lower-priority users; critical messages will still be received within 5 seconds. And **SPARKGAP's** use of dedicated, high power 900MHz channels means that coverage is not a problem, covering the entire hospital complex plus 3-10 miles beyond. **SPARKGAP** delivers messages immediately.

The same is not true with smartphones. With smartphones and SMS text messages, critical users share the same network with millions of other customers. Most of the time, a single smartphone message will get there in just a few seconds and a group will be completed in a few minutes...but 1-5% of the message may also take longer, even hours, because of coverage or Internet availability.

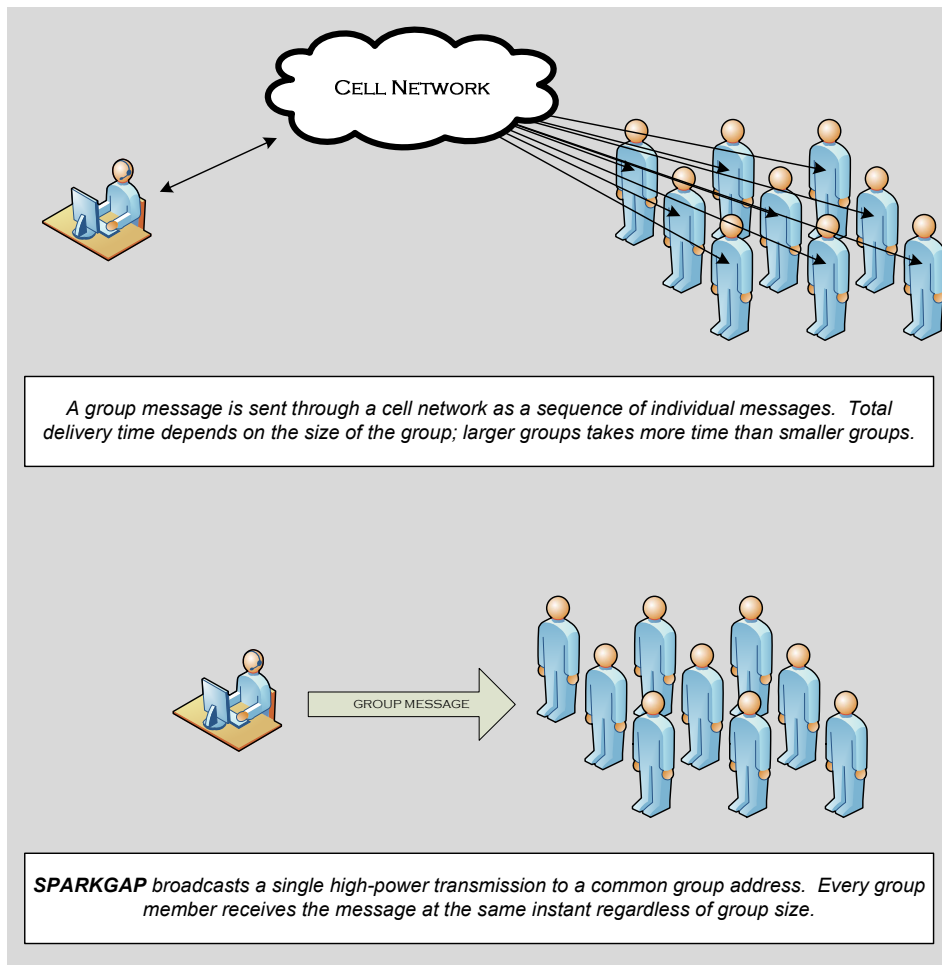


Figure 1 – SPARKGAP has Superior Group Message Performance

RELIABILITY

SPARKGAP is a stand-alone, dedicated push service. It is unmatched in terms of reliability because it is completely self-contained. One **SPARKGAP** base antenna covers an entire hospital complex, plus several miles beyond. It sends messages to personnel directly and receives their responses directly.

In contrast, cell phones depend on external cellular networks, local signal strength within the hospital, and the public telephone network. Smartphones additionally depend on other external components such as the Apple App Store™, Push Notification Services, the Internet, and E-Mail. If any one of these pieces is unavailable (e.g., momentarily down for maintenance, down because of a storm or power loss, etc.), the message is delayed or interrupted.

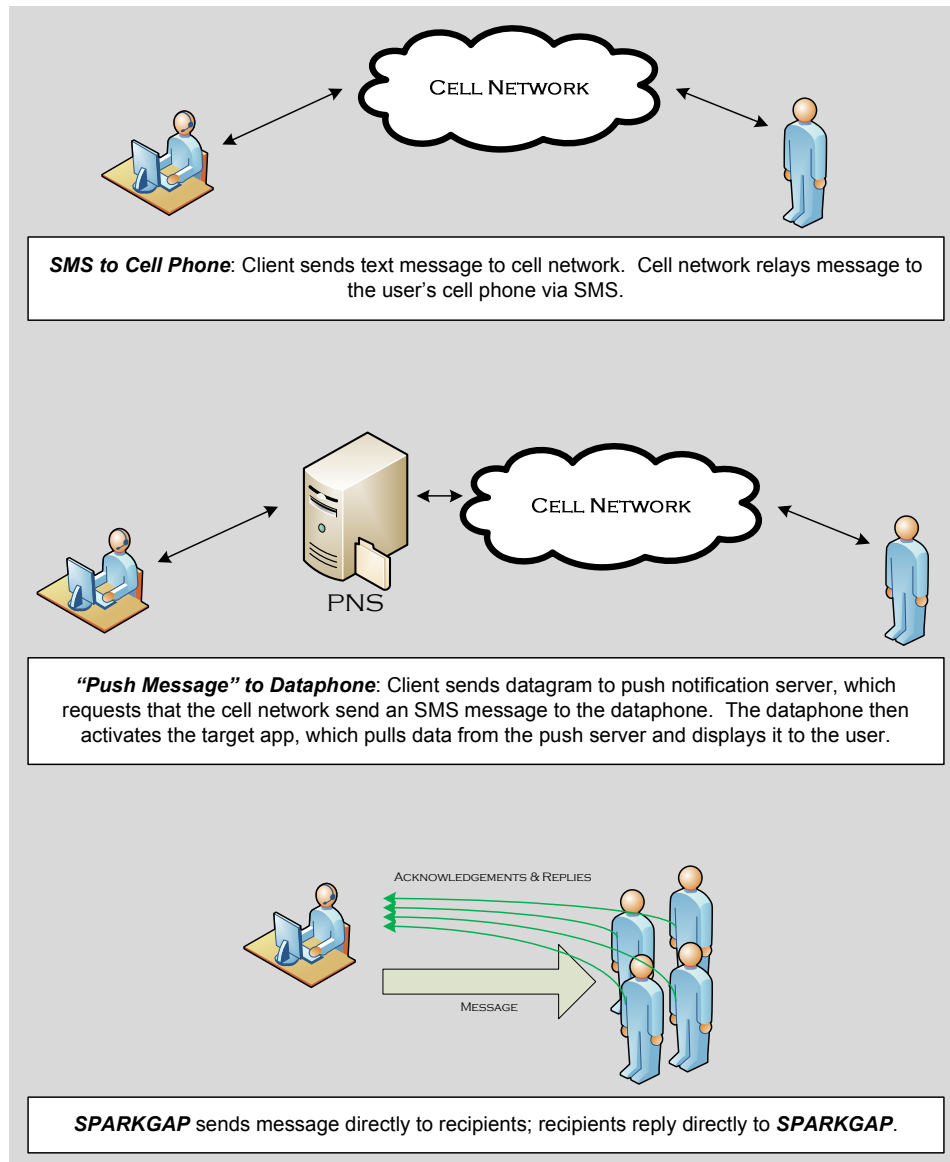
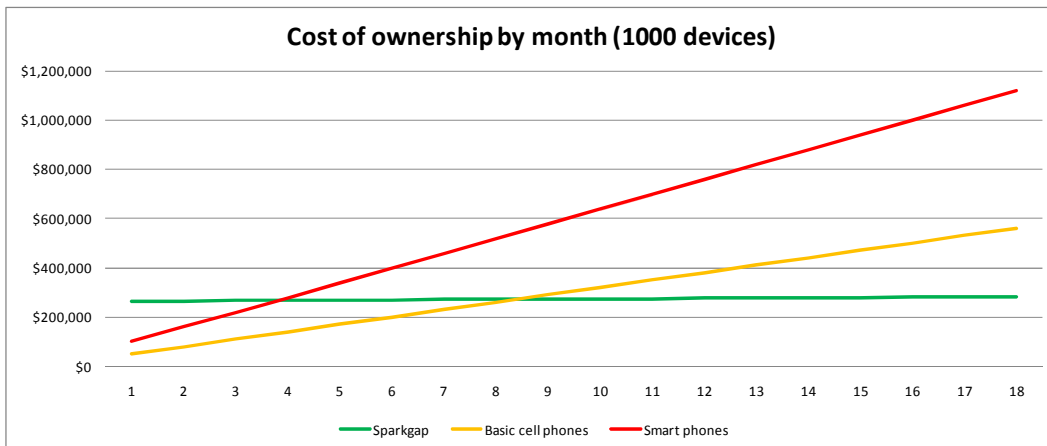
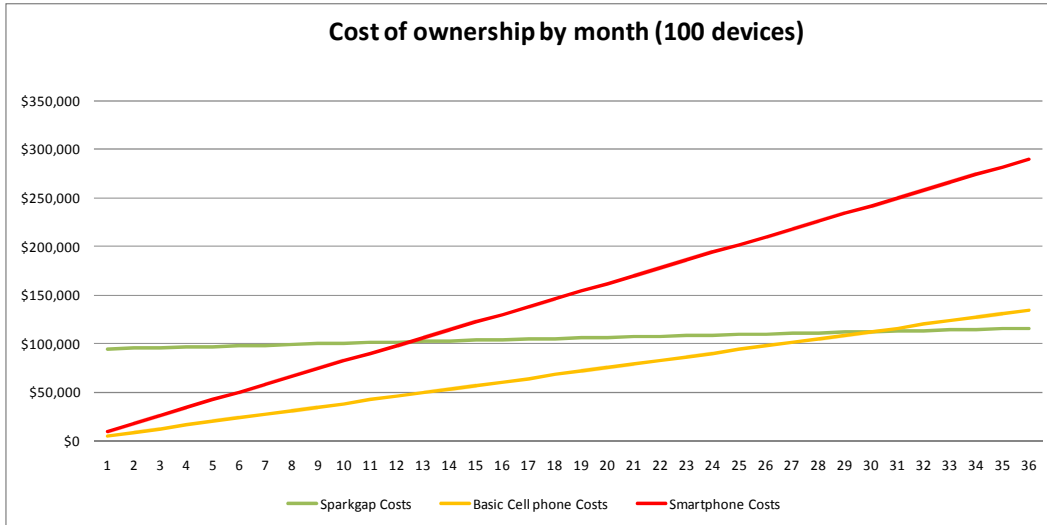


Figure 2 –**SPARKGAP** is Independent and Self-Reliant; Zero Dependence on “the Cloud”

COST

A **SPARKGAP** system has very little recurring cost. In contrast, each cellular phone costs \$30/month or more, and a smart phone costs around \$60/month. For mid-to-large scale institutions, the break-even for **SPARKGAP** vs Smartphones is less than four months; for smaller institutions, about a year.



PRODUCTIVITY

From a user standpoint, an M1503 pager is the model of simplicity. It is a dedicated appliance with one purpose: to deliver critical messages to hospital personnel. A user can read an urgent message quickly, with minimal device interaction and minimal interruption of workflow. In comparison, a smart phone has apps, a touchscreen, keyboard, etc. ; for some users these things are a productivity benefit, but for others, they are a hindrance. The interaction to view the same urgent message is more complicated and the temptation to use the device for non-official business (e.g, “facebook”) is much greater.

From an administrative standpoint, **SPARKGAP** system management is equally straightforward. No programming stations are required for day-to-day management of user devices. Groups’ addresses, encryption keys, pager settings, and other aspects of the system are managed centrally and pushed out to devices automatically over the air, without the need to physically touch the devices.

ACCOUNTABILITY

A **SPARKGAP** system tracks who receives each message, who reads it, how they respond, and when they respond. Every response is available for real-time viewing, and it can be stored for months or years for auditing purposes.

CONCLUSION

Like many other parts of the IT fabric, smartphones bring marvelous capabilities to the enterprise. But, critical messaging is not something that cannot be responsibly moved to the cloud. Critical messaging demands a dedicated, deterministic, radio system, and **SPARKGAP** meets this need better than any other solution. From its extremely simple user devices, to its low cost of ownership, to its unmatched group alerting performance, to its near 100% coverage, **SPARKGAP** is the solution for urgent and critical messaging in the hospital setting.

