

WHITE PAPER



## NEIGHBORHOOD NEWS FEED

REVERE, MONDAY MAY 4TH, 2020

### Local Updates

Hey Revere,  
You can post  
to this board!

[soofatalk.com](http://soofatalk.com)

### Tweets

City of Revere (Revere 311)  
@Revere311 · 3 days ago

#COVID19 As of May 1, the Revere Board of Health has been notified by the Massachusetts Department of Public Health of 1,185 positive cases of COVID-19 in the City of Revere. Forty residents have died, 297 have recovered. Full press release available here: <https://t.co/BFACse4AuK>

### Transit

LAST UPDATED: 4:52pm

#### Wonderland

BLUE East

LINE 4:52, 6 MIN  
LIVE

#### Bowdoin

West

3 MIN, 11 MIN  
LIVE LIVE

[www.soofatalk.com](http://www.soofatalk.com)

Photo courtesy of Soofa.

# Digital Paper for Emergencies

Written and produced by: Captains of Industry®

**CAPTAINS**  
of INDUSTRY

Sponsored by: E Ink Corporation®

**Eink**®

TO MY FELLOW  
BOSTONIANS

LIFE HAS MANY WAYS OF TESTING A  
PERSON'S WILL, EITHER BY HAVING  
NOTHING HAPPEN AT ALL OR BY HAVING  
EVERYTHING HAPPEN ALL AT ONCE.

*STAY HEALTHY & SAFE! - RISHIRAJ*

During a time of crisis governmental agencies are tasked with conveying critical information to as many people as possible as quickly as possible, both within their departments and to citizenry at large. Every minute matters. The COVID-19 crisis is only the most recent disaster that has required rapid communications of urgent information.

Photo courtesy of Soofa.

In the aftermath of 9/11, the Homeland Security Act of 2002 required an upgrade on the U.S. National Emergency Communications Plan (NECP), with a vision “to enable the nation’s emergency response community to communicate and share information securely across communications technologies in real-time.”<sup>1</sup>

While the law mandated better technologies for emergency communications, what it didn’t require was any upgrades to America’s electrical grid infrastructure — the source for all the power needed to run the myriad devices used in communications. For signage in transportation hubs and community centers to TVs and smartphones, reliable power is essential. If America’s electric grid was resilient this wouldn’t be an issue. But it’s not. The American Society of Civil Engineers has awarded the United States’ electrical grid a grade of D+.<sup>2</sup> Older systems such as transformers are more prone to failure, and the advance of climate change is making things worse. Blackouts brought on by storms and other natural disasters have doubled since 2003.<sup>3</sup>

Nuclear power plants in the United States also have their issues, creating a difficult paradox in the event of emergencies. How are managers supposed to notify the local public of emergencies at plants if citizens, as a result of the emergencies, have no power? In the same year the Fukushima Nuclear Plant disaster in Japan knocked out power, five nuclear power plants in the United States lost primary power due to earthquakes, hurricanes and other weather events.<sup>4</sup> One hundred twenty million Americans live within 50 miles of a nuclear reactor. Emergency messages broadcast to phones provide one way to get the word out fast, but power-hungry smartphones typically lose their charge within a few days. During a prolonged outage, people have to rely on battery-operated radios for news. Police going through neighborhoods shouting alerts with bullhorns will only go so far.



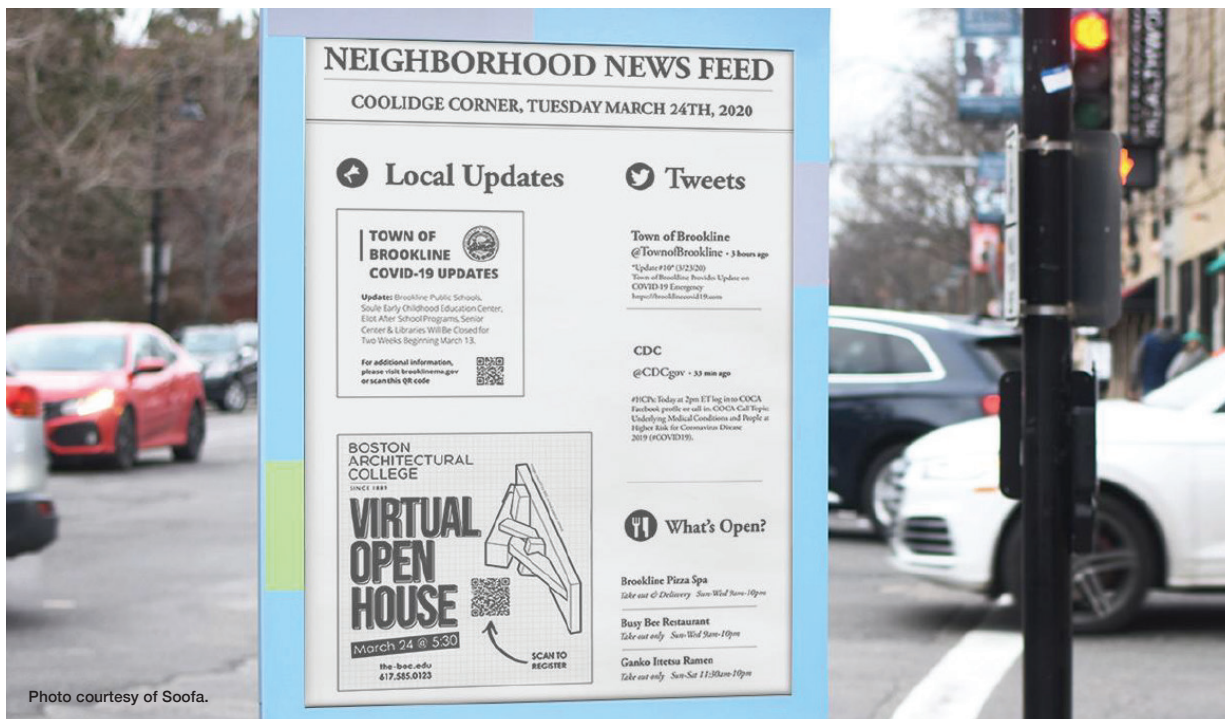
## A surprising solution from an unexpected source: digital paper.

Most people think of digital paper (also called ePaper) as the screen in popular eReaders like the Kindle. While the ultralow power consumption requirements of digital paper have made it easy for booklovers to read endlessly, the technology has a new and important application: Signage for emergency management Public Service Announcements (PSAs). Large-format digital paper screens are being built into everything from community news feeds to bus and light rail signs, allowing city managers to instantly transmit PSAs to the public, even when the power is off.

Pioneered by E Ink,<sup>®</sup> digital paper is comprised of particles within microcapsules or microcups that are coated onto a thin film layer and act as a form of ink. Instead of ink being pressed permanently upon paper, the ink particles in digital paper are automatically recycled to form new letters and images when the display image is updated. Power is only consumed for updates, with zero power required to display a static image. This completely upends what it means for a screen to be considered ON, with major implications for emergency managers. If a hurricane is approaching a city, or a nuclear reactor is about to fail, managers can broadcast a message such as evacuation routes out to neighborhood signs and devices. In the event of a prolonged power outage, the last message broadcast will stay on the screen indefinitely without any electricity whatsoever.

## COVID-19 messages that keep working no matter what.

The swift arrival of the pandemic provided a real-world example of the value of E Ink screens to keep the public informed. In this crisis, power outages — thankfully — haven't been an issue, although the technology's ultralow power consumption and energy independence have proven to be essential.



Soofa signs are Wi-Fi-connected community news feeds that keep everyone in the know, including the underserved neighborhoods.

Community news feeds made by Soofa, incorporating 42-inch E Ink displays, are popping up in numerous cities and towns across America. The signs are solar powered with battery backup, and do not require a costly connection to the electrical grid. During the crisis, Soofa quickly adapted sign layouts to allow for PSAs with COVID-19 alerts. A live Twitter feed showed health and safety-related messages from local municipalities as well as the Centers for Disease Control (CDC). In addition, citizens could see which local businesses were open.

Then something unexpected and wonderful happened. Because the company's "Soofatalk" platform is open-source, citizens were able to post messages of love and support. Creating a sense of unity and strength was just as valuable as sharing tips on hand washing. Thanks to an ad-supported model, Soofa signs are available to municipalities at no cost.

### **Real-time transit information combined with COVID-19-related alerts.**



Signs manufactured by GDS and Mercury, and installed by Fleetwatch, have been deployed by Boston's MBTA.

Boston's MBTA transit authority was in the middle of a test of new E Ink bus and light rail signage when COVID-19 bore down on the city. The MBTA's solar-powered signs, manufactured by GDS and Mercury, are updated wirelessly to show arrival times. In the pandemic, the MBTA was able to quickly adapt the signs to show COVID-19-related service changes. "Solar powered connectivity allowed us to communicate with about 20,000 riders who had not seen a digital screen at their stops before," reports Kevin Mulder, MBTA project manager. "We can change the signs instantly with high-alert COVID-19 messages."

In addition to being able to post PSAs and service updates, transit authorities have the flexibility to partner with local advertisers to display everything from coupon offers to job listings. With ad revenue, municipalities can potentially offset the cost of the signage to make deployment highly affordable.

## Emergency signage that goes anywhere there's an emergency — not just where there's a plug.

Photo courtesy of Technoframe.



Signs like these manufactured by Technoframe can be easily moved from place to place as needed.

SolStreet's solar-powered benches display community messages of all kinds, including ads from local businesses or emergency messages broadcast by a city. As an added benefit, citizens can take a seat and recharge their smartphones. In the event of a prolonged power outage, having a fully charged phone is a lifeline to the world.

## Reaching the underserved equally in their native language.

Not everyone can afford the latest Apple or Samsung gadget, yet everyone deserves access to information. E Ink signage makes it easy for municipalities to share updates with the maximum number of people in neighborhoods at every socioeconomic level. In addition, the signs can be updated instantly to display different languages.

When organizations are in crisis mode during fast-unfolding emergencies, being able to place signs where more people can see them quickly is critically important. Instead of being limited to sign placement near wall outlets, E Ink signs give managers the ability to move signs around and change messages on the fly. As airports begin opening up, for example, signs like those manufactured by Technoframe can be moved from gate to gate in minutes, and updated in seconds to show the latest flight information. Battery operated, the signs can be unpacked from small crates and assembled wherever they're needed most.

Photo courtesy of SolStreet.



SolStreet's signs include benches where citizens can have a seat and charge up their phones.





Photo courtesy of SolStreet.

### Ready for the next crisis.

The very nature of disasters makes them sudden and unexpected. They can happen at any time, for all kinds of reasons. The job of crisis managers is to be always ready, with resilient systems in place to get the word out to as many people as possible in real-time. During the pandemic, an insidious and unseen virus caused havoc. The next emergency could be a massive hurricane that knocks out power to an entire region for weeks or even months. Dealing with unknowns is simply part of the job of being prepared, no matter what. In this environment one thing is clear: City planners and businesses will need flexible, affordable and power-independent signage for emergency communications. While no technology provides a panacea, E Ink's digital paper will play a growing role in helping to keep everyone informed and safe.

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## About the Author

Ted Page is a Co-Founder and Principal of Captains of Industry. Page has created content and marketing for a wide range of global companies including Apple, Microsoft and Starbucks.

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## About the Sponsor

E Ink is the originator, pioneer and commercial leader in digital paper technology. The company delivers its advanced display products to the world's most influential brands and manufacturers, enabling them to install extremely durable, low-power displays in previously impossible or unimaginable applications and environments.

E Ink encompasses the combined E Ink Corporation, which was spun out of the MIT Media Lab in 1997 to commercialize electronic ink and EPD technology, and Prime View International, which was established in 1992 as the first TFT LCD company in Taiwan, focusing on high-quality small-to-medium-sized TFT LCDs. In 2009, Prime View acquired E Ink Corporation to further integrate and expand the EPD supply chain and the new combined companies were branded as E Ink.

E Ink's corporate philosophy centers around delivering revolutionary products, excellent user experiences, and environmental benefits through advanced technology development.

## Sources:

1. U.S. Department of Homeland Security
2. Infrastructure Report Card
3. Newsweek
4. Fast Company

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