Personal Safety, Prevention & Technology

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Starting in 2014, at least one third of the nation's college and university students (in the United States) will be victim of some form of violence during the course of their four-year collegiate experience[1]. This alarming statistic is also an opportunity to leverage information to improve personal safety. This cause is at the center of the V.ALRT Personal Alert Device, an ergonomically designed item that fits discreetly in a pocket or bag, or may be worn on the wrist or around the neck as a pendant. Using Bluetooth® SMART technology, in association with a proprietary and innovative software application, V.ALRT initiates calls and personalized text messages from a smartphone (to three pre-selected contacts) with the simple push of a button. These messages indicate that a person needs help, further providing the location information (from the GPS feature on that user's smartphone) about that individual's whereabouts. The V.ALRT application can also initiate a follow-up message. This paper offers a detailed and intelligible overview about how to prevent and respond to this epidemic, which is a threat to the country's academic institutions and a summons for all citizens to defeat this danger.

Key words: Personal Safety; Innovation; Product development; Technology Innovation, Technical advertising

INTRODUCTION

Today, well over 90% of the U.S. population has a cell phone or another form of communication technology, which generates data that can help individuals, government agencies and private organizations to more effectively ensure personal safety[2]. By reviewing the respective advantages that cell phones, social media and crowdsourcing offer, with regard to preventing physical attacks against citizens in general and students in particular, we have a simple yet extremely successful solution to this problem: V.ALRT, a personal Alert Device, ergonomically designed to fit inside a pocket or bag. V.ALRT may also be worn on the wrist or around the neck as a pendant. Small, versatile and effective, this device works with a smartphone to sound an alarm and deliver urgent calls and text messages requesting immediate help. A simple press of a button signals select individuals from a users contact list for assistance, wherever and whenever the user needs it.

We propose several ways to feature V.ALRT with different education markets, including high school, college and university students.

Evidence confirms that using new technologies for enhancing personal safety can produce impressive results, depending on the context in which these resources are applied and whether a specific type of technology plays a beneficial role in a certain situation.

Bearing these facts in mind, there are many lessons – from many cases – that include four promising steps for strengthening prevention efforts that feature new technologies.

1. *Not every problem is the same, and not every solution is suitable for every situation.*

   New technologies have the potential to make huge contributions to safety prevention efforts, but they are not a panacea for holistic solutions. Which is to say, we need to have a well-defined understanding of the circumstances – and the proposed technology for resolving these events – where personal safety is at risk.

2. *Consider the context.*

   These cases show that socioeconomic, cultural, and demographic factors influence, to varying degrees, the positive impact of technology. The same variables determine what type of technology is most appropriate for, and how multiple technologies can be combined to improve the outcome of, a diverse array of personal safety scenarios. In this regard, international organizations and government agencies should perform threat assessments and feasibility studies that address this issue.

3. *Use technology to help information flow horizontally, not vertically.*

   Horizontal, citizen-to-citizen Information and Communications Technology (ICT) are a superior way to connect "warners" and "responders," to better and more closely resolve a crisis. These actors also make a community more resilient and able to meet challenges concerning personal safety. Civil society organizations should identify - and reward - skilled individuals and groups that can adopt new technologies as a means of preventing violence and other potential conflicts.

4. *Foster partnerships for better results.*

   Studies indicate that prevention programs, which combine the powers of government agencies, civil society organizations and the private sector, are more successful than other techniques. Indeed, empowering people to participate in personal safety initiatives may be one of the most significant innovations advanced by technology in recent memory.

1 International Telecommunication Union (ITU), "ITU World Telecommunication/ICT Indicators Database, 2012," available at www.itu.int/ITU-D/ict/statistics/material/pdf/2011%20Statistical%20highlights_June_2012.pdf; United Nations, "The Millennium Development Goals Report 2012," New York, 2012, p. 63.

2 The rate of data production now more than doubles every year, meaning that every year we are producing more data than all previous years combined. See Marie O'Reilly, "Robert Kirkpatrick, Director of UN Global Pulse, on the Value of Big Data." *Global Observatory*, November 5, 2012, available at www.theglobalobservatory.org/interviews/377-robert-kirkpatrick-director-of-un-global-pulse-on-the-value-of-big-data.html

V.ALRT Product Description

V.ALRT is a small wearable device that works with a smartphone to sound an alarm, and deliver urgent calls and text messages, with the simple press of a button. Designed to discreetly fit in a pocket or purse, or wearable with one of several accessory options such as a pendant, wristband, or belt clip, V.ALRT is the ultimate union of form and function.

Using Bluetooth® SMART (Bluetooth® 4.0 LE) technology, V.ALRT initiates calls and text messages from a designated smartphone (iOS or Android). With just the press of a button, V.ALRT sends a command to your smartphone to transmit your location, along with a personalized text message to up to three pre-selected contacts.

V.ALRT can even send follow-up calls from your smartphone to ensure you capture your contact's attention.

Figure 1. V.ALRT gives you the peace of mind of knowing that help is there if you need it, thanks to the simple push of a button.

V.ALRT has a fall detection feature that will send an alert if it detects a sudden fall that may have left the user incapable of pressing the alert button. Fully waterproof, V.ALRT works in the shower; it also operates seamlessly (as a wearable device) while you exercise. Best of all, there is no need to recharge V.ALRT, as it provides up to a year of use before there is a need to replace the battery.

FEATURES

Text & Call
After pressing the button, V.ALRT transmits a command to your smartphone to send a text message to your pre-selected contacts, along with follow-up calls to these individuals. Users can also thoroughly customize these alerts.

GPS Location
In addition to these text messages (or alerts) and follow-up calls, the location from your smartphone can be sent to your contacts.

Automatic Fall Detection
A user can activate the Fall Detection feature, which will automatically send an alert detecting certain falls .

Wireless Range

V.ALRT must be within range of your smartphone to work. It has a wireless range of up to 75' indoors or up to 300' outdoors using Bluetooth® 4.0.

Waterproof

Ideal for the shower or vigorous exercise, V.ALRT is waterproof up to 1 meter (3.3 feet), for a maximum of 30 minutes.

Android & iOS Compatible

V.ALRT works with iPhone 4S/iOS 7 or newer models, as well as any smartphone that uses Android 4.3 or more recent versions with Bluetooth® 4.0.

Out-of-Range Notification

If V.ALRT is out of range from a synched smartphone, both devices with receive an audio notification about this change.

No Charging Needed

V.ALRT has up to one year of battery life, powered by a standard CR-2032 watch battery. The battery is easily replaceable by the user.

Compact Design

At only 1.3 inches in diameter, V.ALRT is comfortable to wear and sleek enough to fit in a pocket or bag.

Accessories for multiple styles of wear

V.ALRT comes with both a Wristband and Keychain/Pendant. (Users may purchase their own separate neck strap.)

Silent Mode

For use as a silent alarm or panic button, a user can activate Silent Mode in the App to turn off the audio alarm or visual notifications.

No monthly fees

These features are available without any monthly service fees.

V.ALRT Student Safety & Personal Protection

The most dynamic area of innovation for information and communications technology (ICT) involves student safety prevention and use by the public at large[3]. These tools continue to emerge from the private sector, intended neither for government authorities nor regional law enforcement. In this situation, with demand from academic and research-oriented institutions, V.ALRT is an ideal solution and an excellent signal replicator. For example: Among middle school and high school students, V.ALRT can be part of the supplies teachers, principals and superintendents offer their respective districts.

In the event of an ,students would be able to start the signal in any part of their school. The signal would reach any of the teachers or faculty carrying a cell phone in the specified perimeter (a range of 75 feet inside the building and 300 feet outdoors).

The information would then trigger a response from the Principal, who would relay the signal to the school's security staff. These personnel would be able to see the GPS location of the student population in their database and on their computer screen, so they may quickly respond to the correct location. The same concept applies to university campuses and outside facilities.

Figure 2. V.ALRT product images

3 Carnegie Commission on Preventing Deadly Conflict, "Preventing Deadly Conflict: Final Report," New York: Carnegie Corporation of New York, 1997.

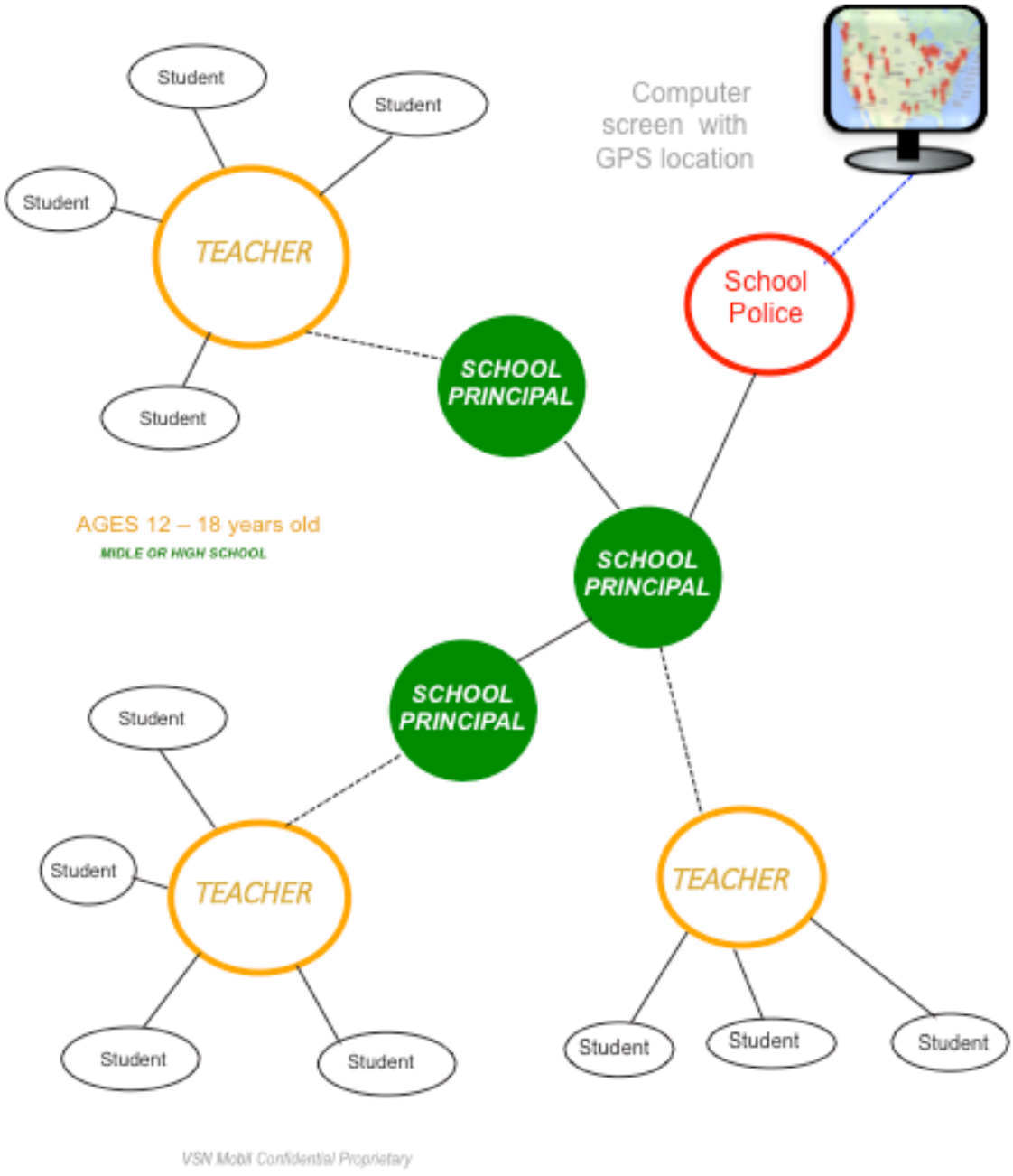

Figure 3. Illustration for use in middle schools and high schools. [4]

4 Referenced by Franco Lodato in a video interview for CCTV AMERICA , May , 2014. Though, the reference for horizontal social connectivity was reference by ITU, "ITU World Telecommunication/ICT Indicators Database, 2012

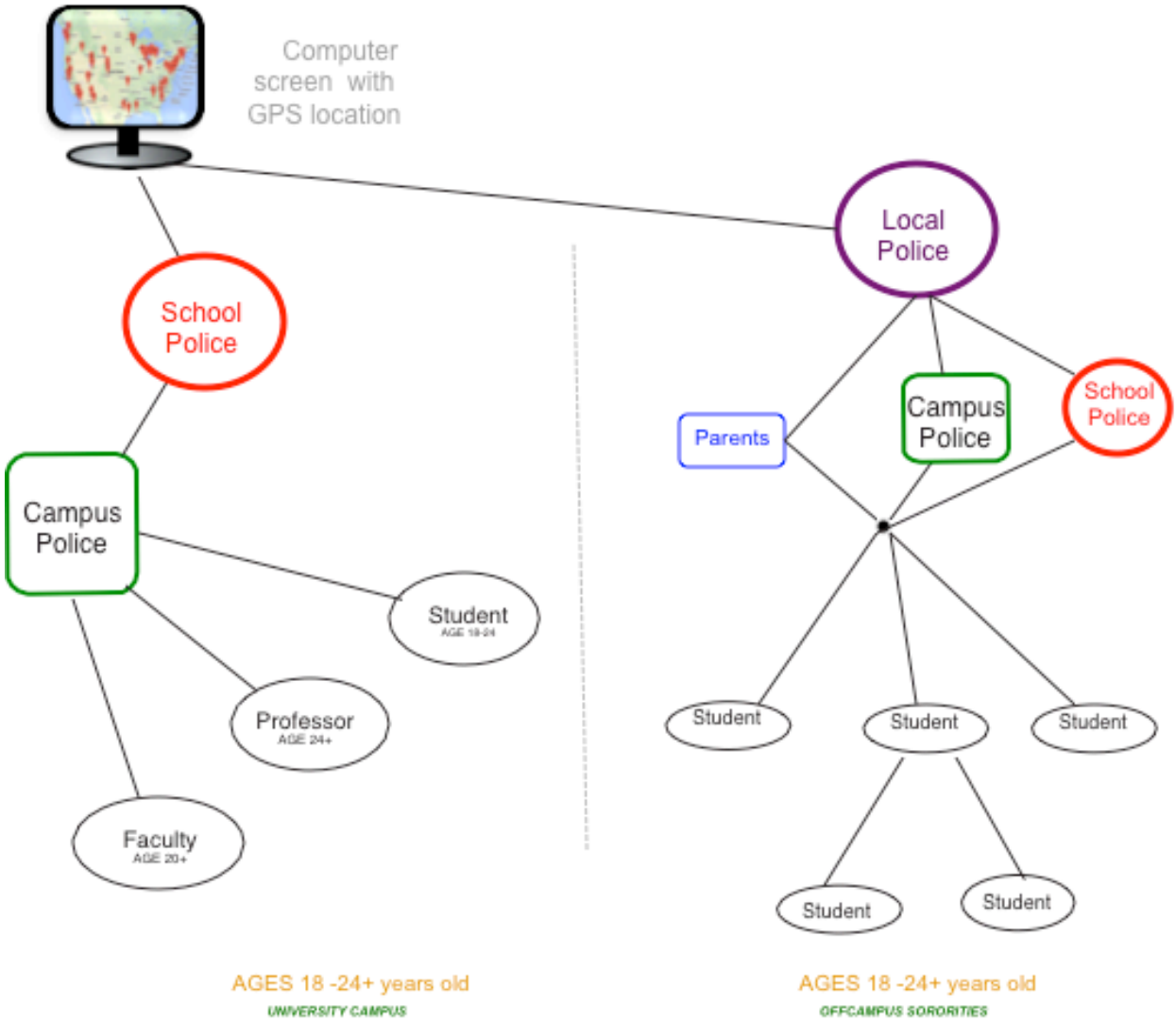

Figure 4. University Campus and Off-Campus Illustration.

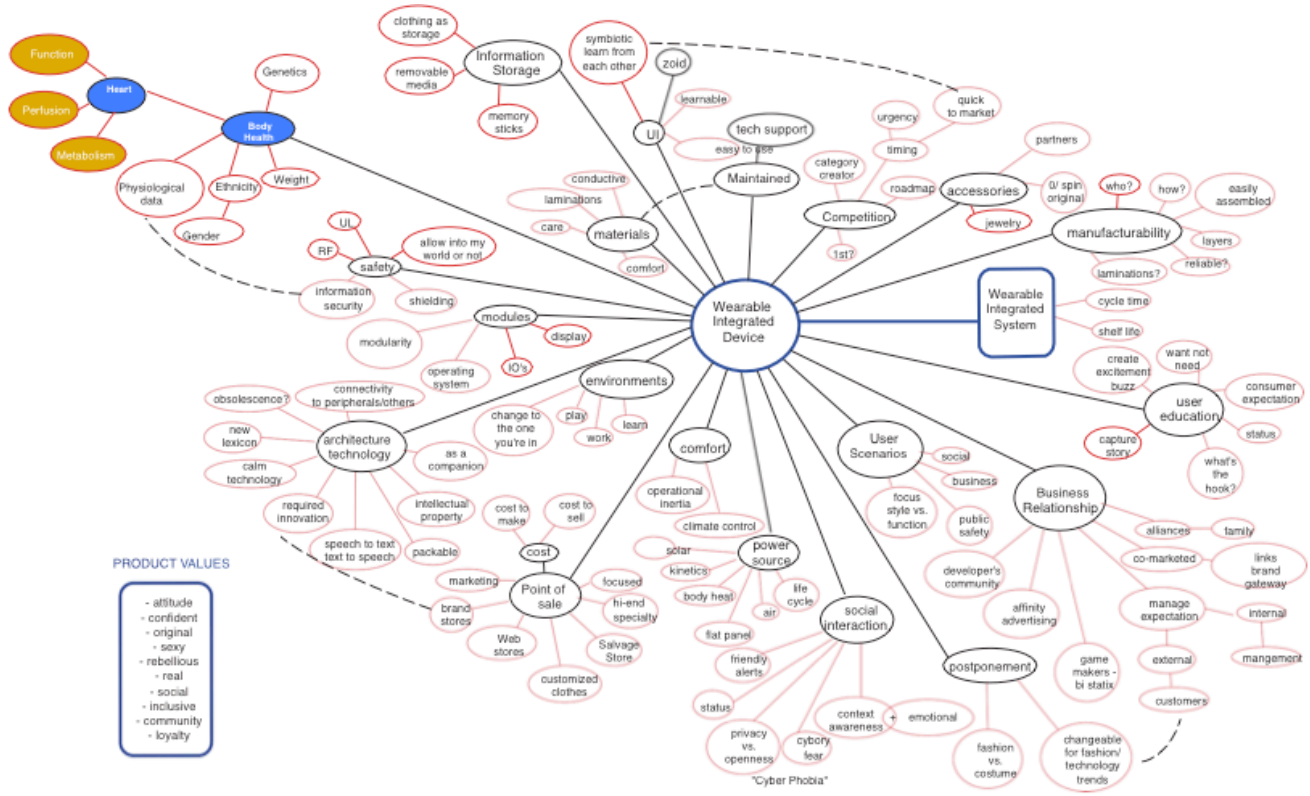

Figure 5. Wearable Device Ecosystem [5].

The combination of these criteria described on the example above are referred primarily to environments where technology penetration is at the highest. Given the relative newness of some of these technological advances, it will be naïve to think that our suggestion is the paradigm solution to this complex problem. They were written by independent experts, and high priority was given to the inclusion of inputs from universities and research organizations that analyzed certain occurred crises. All experts worked using the same terms of reference and method of structured, focused comparison to ensure the comparability of their findings. Each study is a product of both desk and field research. With a view to facilitating the practical application of these findings, our report's conclusion captures cross-cutting lessons and recommendations for governments, and civil society organizations.

Frequently we assume we can design systems that allow us to overcome complex problems. As designers and innovators we must reassess this assumption.

ABOUT THE AUTHOR

Franco Lodato, M.Sc., IDSA/AIGA, Creative Director VSN Mobil. Designer and Innovator, he is a Charter Member of the National Academy of Inventors and a member of the Executive Committee of the USF Chapter and holds a master's degree in Biodesign from the European Institute of Design in Milan. Experienced in the world of wireless communications, wearable technologies, and consumer markets for more than 20 years, he spent much of that time implementing bionic design in these arenas. He has expanded upon this exploration in companies like DuPont, Gillette, Motorola, Herman Miller, and Pininfarina, among others. Lodato's visionary approach implementing design innovations based on nature's paradigms and the holistic consideration of the user's experience is well-published in leading design and technology periodicals. He is a regular speaker at design and innovation conferences worldwide, and holds 57 US design and implementation patents.

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