

Barcelona Treball

Summary of sector trends: Security and safety

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The impact of ICT in emergency management and safety

Performing a good emergency management is complex. The Government, the institutions and the civil society need to take a set of administrative decisions, and be endowed with organizational, operational and technological knowledges. The development of policies and strategies based on ICT, large-and small-scale, reduces the impact of disasters and the perception of insecurity.

The growing concern for society safety has made risk prevention a major focus of attention for both government and businesses. **Crisis situations, disasters or natural and human emergencies have shown the need of strengthening the relationships between the Government, and civil, military and humanitarian or voluntary associations.** Not only to improve crisis management (fire, snow, terrorist attacks, accidents, etc.), also to strengthen citizen security operations (monitoring, emergency management, prevention, disruption of basic services, etc.).

In recent decades there have been many emergency situations, both locally (for example, flooding in the towns of the coast), nationally and internationally. These emergencies have generated some concern, either because the security services have been overwhelmed and under-resourced, or because it has shown a lack of foresight and planning of those responsible for the services.

Improving the emergency management service is one of the priorities of the public sector modernization. An increase in the effectiveness and efficiency goes through applying new technologies in emergency management and risk prevention. In fact, the incorporation of new technologies in the public and private security sector, at a strategic, tactical and operational level, facilitates risk prevention, helps minimize damages from disasters and improve service to citizens.

The **Government Plan for 2011-2014** is structured around eight main lines that respond to country challenges¹. The **fifth line is about security, and contains six areas of action aimed at achieving 47 objectives**; the following are some of them:

- Strengthening the coordination between regional and local police.
- Implementing a Comprehensive Emergency Management to ensure effective and coordinated action between all actors concerned: law enforcement, emergency, health and civil protection.
- Promoting the use of ICT (Information and Communication) to improve coordination in security and emergency management.
- Improve 112 emergency services as a unique number throughout Catalonia.

Achieving these objectives goes through the application of advanced technologies for developing large and small scale projects. For example, information systems throughout the field of prevention, fire fighting and rescue, local control applications of special interest to public safety, mobile applications for traffic reports, provision of devices in police vehicles, integration of alarms in different facilities, collection systems daily information, etc.

¹

http://www.gencat.cat/pladegovern/cat/2011_2014/PdG_2011_2014.pdf

Impact on the sector

ICT plays a vital role to ensure communications availability in difficult conditions; situations where it is not possible to communicate by mobile phone, for example, fires or snowfalls. In addition, it also allows for immediate coordination between all actors involved in emergency resolution.

The improvement of emergency management in ICT goes through the **development of protocols and exchange languages between heterogeneous systems**, to facilitate communication and the transfer of information between the agencies involved regardless of the technology used by each one. The sector, in collaboration with public and private entities, and universities, must continue researching and developing solutions to integrate communications among security and civil protection services involved in emergencies.

In short, it is necessary to **canalize the efforts of the agencies involved in improving interoperability** (the ability to share and exchange data and information between different systems) **and integrating the largest number of georeferenced data, especially those relevant for managing serious emergencies**.

As an example, some systems that are being developed and integrated in an orderly manner to the public management of emergencies are: mapping applications that provide information related to statistical and documentary information (demographic information such as territory maps), Global Positioning Satellite (GPS) applications for mobile units, antennas and wireless, simulcast cameras, motion sensors in public areas, reports to emergency services in an integrated manner (112), etc.

In fact, the ISO (International Organization for Standardization) has published in 2012 a new standard for emergency management in order to minimize the impact of disasters and terrorist attacks, among other milder incidents. This is the **ISO 22320**, which describes global best practices in terms of organizational structures and procedures to support traceability and information management. Bases its principles on interoperability and provides a basis focused on ICT for coordination and cooperation².

Although there is a clear tendency to use ICT in all sectors of activity, such use is not made with the same efficiency in emergency management. This is demonstrated by the fact that most citizens of Catalonia don't use enough the electronic resources developed by government (such as the Government Emergency website) to access information in emergencies, or that 112 is still unknown among citizenship³.

Moreover, the **Internet is increasingly used as an information source in crisis or disasters**, but it is poorly used and exploited by the government, as evidenced the fact that the Catalan Regional Government does not use the e-mail to report emergencies. In any case, the mobile Internet has a central role in social communication, and involves changes in the way of consuming information.

But technology is not the only requirement; experts suggest that better coordination and collaboration between private resources (people and technology security firms) and public resources (law enforcement, defence, universities, investment, etc.) is essential to improve the effectiveness of emergency management.

Despite the fact that the high investment required to deploy technological systems in security may be a restraint, this investment is amortized in the midterm.

Developing a reporting system for the traffic using PDA terminals and Wi-Fi, costs about 900,000 Euros.

A video surveillance system in the street in a city of 1 million people costs about 360,000 Euros.

²

http://www.iso.org/iso/catalogue_detail?csnumber=53347

³ <http://www.upf.edu/hipertextnet/numero-10/nuevas-tecnologias-percepcion-ciudadanos-comunicacion-emergencias.html>

Impact on professional profiles

In Spain, there are 192 companies involved in the development of security systems, 41 of which are located in Catalonia.

It is estimated that in 2012 the body of the Mossos d'Esquadra will incorporate about 800 new professionals.

In the public sector, and more specifically in **security forces and civil protection**, interoperability is one of the most important aspects that will modify the professionals' skills. The fact that the information may be accessible by different professionals will generate greater collaboration between them. They will have to learn to communicate without mistrust, and ensure that the hierarchical strata do not affect the effectiveness in resolving emergencies.

Furthermore, both the security forces and the armed forces need to approach to civil society. This is necessary, not only to generate some empathy and gain their support, essential for rapid troubleshooting, but also to **use civil technology**: mobile applications, communicating via network, web 2.0, etc. Social networks are a powerful communication tool to be exploited at security level. In this sense, the need for retraining in the use of ICT by all professionals is clear, especially by those directly related to the security sector.

Also, public safety professionals, armed forces members, security forces, protection and care professionals, and other professionals with degrees or diplomas related to risk prevention and emergencies, **will specialize in managing emergencies**. Especially those with more responsibility and coordination functions, for example, will need to attend a **postgraduate or a master about Risk prevention and emergency management** offered by some universities in Catalonia.

In accordance with the advantages brought about by technology in prevention and security risk, some Catalan and Spanish companies are focusing on developing safety devices based on ICT. These companies **require trained professionals in computing and telecommunications, capable of developing information systems**.

These professionals must have knowledge of: service-oriented architectures (SOA), semantic web, P2P protocols, techniques of representation and information fusion, interoperability protocols such as SCIP, data encryption, modeling and simulation, artificial intelligence, nanotechnology, electronics, sensors and robotics, among others.

Experts point out that, in Spain and in Catalonia, there are small **companies formed by entrepreneurs who are highly technically qualified and have experience on R&D, who can develop competitive products in short time**. It would be advisable that professionals with greater economic capacity (public and large private companies) constitute specialized teams with these small companies capable of facing complex projects. These groups should, at the same time, self-coordinate with professionals from Universities⁴.

More information about the industry is available on the Barcelona Treball website

[Market > Industries > Business services Security and safety](#)

This section of the website contains a report on the industry covering employment aspects, where you can see job files for various job profiles and find out the main resources you need to find work in the industry.

⁴ New Technologies in border security MoD. 2010.

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