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THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGIES ON PRISON INSTITUTIONS

AZ INFORMÁCIÓS ÉS KOMMUNIKÁCIÓS TECHNOLÓGIÁK HATÁSA A BÖRTÖN INTÉZMÉNYEKRE

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Absztrakt

Faced with increasing prison populations, limited capacity, and rising prison construction costs, prison administrators have intensified their search for new innovative and creative technologies and solutions .[1] The part of that entity is the Information and Communication Technologies (ICT). New technological innovations have been developed to monitor and to improve the performance of the prison institutions, but we know little about how and why ICT are adopted, and the consequences. The aim of the paper is to provide an examination of a wide range of ICT that have applications in the areas of prison institutions. We provide a description of recent ICT solutions, and then emphasize the impact of new ICT on operation of prison institutions. We specifically discuss three key social groups in prisons – (1) prison administration, (2) prison staff, (3) prisoners and the impact of the use of new ICT on them respectively. They are the fundamental and important nods and conduits through which the main information and financial resources are circulating in the prison network. Finally, we would outline any other developing ICT that can be used in the future. Ide kell beírni az esetleges egyéb információkat is a cikkel kapcsolatban. (Pl. Ha valamilyen pályázat támogatásával készült.)

Keywords: *ICT, prison system, prison institutions, prison administration, prison staff*

Abstract

Az egyre növekvő börtönpopuláció, a korlátozott kapacitások, és a növekvő börtönépítési költségek, a büntetés-végrehajtásban dolgozók fokozottan keresik az új, innovatív és esetenként kreatív technológiákat és megoldásokat. [1] Ezen megoldások közé tartozik az Információs és Kommunikációs Technológiák (IKT) keresése is. Különböző technológiai újítások kerültek kifejlesztésre annak érdekében, hogy a börtön intézmények javítsák a teljesítményüket. Ennek ellenére keveset tudunk arról, hogyan és milyen módon választják ki a különböző IKT-kat. Jelen írás célja, hogy a börtön intézményekben használatos különböző IKT alkalmazásokkal kapcsolatos döntéseket vizsgálja. Leírja az IKT megoldásokat, majd hangsúlyozza az új IKT-k hatását a börtön intézmények működésére. Konkrétan vizsgálja az új IKT-k hatását három kulcsfontosságú csoportok esetében, úgymint (1) a büntetés-végrehajtási személyzet, (2) a börtönök személyzete, valamint (3) maguk a fogvatartottak. Ezek a csoportok képezik azokat az alapvető csomópontokat és kapcsolatokat, amelyeken keresztül a főbb információs és pénzügyi források megtalálhatók a börtönökben. Végül az írás felvázolja az IKT-k lehetséges felhasználását a jövőben.

Kulcsszavak: *IKT, börtönrendszer, börtön intézmények, a büntetés-végrehajtás, büntetés-végrehajtási személyzet*

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INTRODUCTION

We are living in the era of immense influence of the Information and Communication Technologies (ICT) on society. The ICT is generally regarded as the super high way through which information is transmitted and shared by people all over the world. [2] The ICT is shaping our daily activities whether at home or on other places. It completely changed the way the government services are conducted. We can provide numerous examples of the wider application of the ICT in the spheres such as economy, trade, finance and education. In a society and economy networked with complex info communications systems we take care of almost all of our daily businesses in the net, we might fall into our own trap of advanced state. The government, economy structure, traffic network, power supply system etc. of a well networked and developed country can become paralyzed or can be limited in their operations. [3]

Public organizations' management and leadership are actively encouraging the mechanisms to support the promotion of the newly established ICT. For example, it seems to be that the Internet and mobile phone applications could enhance the effectiveness and efficiency of public service providers like hospitals, schools and administrative offices.

But there is one specific public field of activity where the process of the ICT penetration made a slow start at the beginning. It is the prison system[1]. At the first half of the twentieth century prison institutions lagged far behind business and other government institutions in adopting new technology. The deprivation of access to ICT seems to be as a new obstacle for all core social groups making up the prison institution as whole entity. Prison administration's main role is to lead and organize the daily activities of the organization. The role of prison staff is to support and organize the daily activities of the organization according to the rules and procedures which are applied to the particular organization. Prisoners are the essential group of people which on all functions and operations of prison institutions are focused on.

Some experts stated that the reason of prison organizations' use of the ICT particularly slow is related to the specific characteristics of its activities. It is fair to state, based on the evidence and analyses developed by key researchers in the field, the following propositions: *the technology can greatly improve the safety and effectiveness of the prison institutions in any country*. A clear and overriding concern of those in the prison institutions is the safety of prison staff and prisoners themselves. The best way to do this is to reduce the possibility of dangerous and critical situations in prisons. In short, ICT can make prisons safer for both prison staff and prisoners. New and innovative technologies could enhance the effectiveness of prison institutions. [4] For example, computers will offer nearly unlimited possibilities for collecting information and sharing it with other governmental organizations which is very important for the functioning of any institution.

THE USE OF ICT IN PRISON ADMINISTRATION

Information as well as the legal, administrative and financial areas is crucial to prison system as a whole. Knowing what is happening gives prison administrators as leaders of particular prison institution the power not only to react to problems urgently, but also to prevent them. In recent decades, ICT has undergone significant changes. Prison administrators can now

[1] Here, we are using the term **prison system**. There is different application of the term among the national prison communities. It depends on the legal background, tradition and culture of each nation-state. For instance, in Hungary the main organization dealing with imprisonment of inmates called Hungarian Prison Service (Büntetés-végrehajtási Szervezet).

keep in touch by *e-mail* and can share information on web pages on *the Internet* with relevant organizations so that to optimize the available resources.[5] To put it more clear, ICT give more accurate and quick access to information and internal units of the prison. The timely, accurate and relevant information sharing with both head-on and subordinate organizations is the indispensable characteristic of modern prison administration. The following ICT and devices are commonly used in prison institutions around the world.

Videoconferencing is another way to share thoughts and ideas in the prison administration. Meetings that once required expensive travel can now be attended from the one's office or from a local teleconference site. In addition, satellite TV and video technology have enhanced distance communication for prison administrators. [5]

Mapping tools (electronic bracelets) is another ICT solution. It can help to prison administration by tracking disciplinary incidents, visitation patterns and medical information; managing gangs and escape threats; and identifying personal information about prisoners' daily activities. [5] In the form of data collection, storage, and processing systems, ICT allows prisoner administration to cooperate with local governments, decreasing their dependence on head-on organization. There are various kinds of information management systems (software) and solutions available and applicable for the specific operation and performance of different prison institutions (pre-trial detention centers, prisons, high security prisons). [6] It means that the overall process of decision making and agenda setting (which are the main functions of prison administrations) would become more agile and productive. Therefore secured intranet and internet networks, computers and software programs play critical role in managing daily activities of prison administration.

THE USE OF ICT FOR PRISON STAFF

The increasing use of ICT is an important aspect in addressing the needs of the prison officers. New technologies have also proved helpful in reducing costs and improving the effective operation of facilities.

Modernization of security systems and improved protection for staff are key issues facing prisons. Real power in a prison resides in information. To manage prisons effectively, operators need to control information at all levels. This means knowing what is happening at all times, despite the difficulties associated with a prison environment in which, by definition, information is frequently withheld or concealed. [7]

The wider implementation of ICTs in prisons helped to increase the level of security for the prison officers and prisoners. Because of unique situation, prison staff is constantly facing the dangerous conditions which could put their wellbeing and life in jeopardy. The prison system brings various technological solutions to tackle the persistent issues of security and safety. The physical security measures for prison staff include X-ray machines, wands and portals for detecting metal; systems for detecting explosives; and biometric entry systems for visitors, to ensure that prisoners do not escape by posing as visitors. [5]

In healthcare service, many prisons' medical staff utilizes *telemedicine*. Telemedicine allows physicians to consult with medical personnel from distance through videoconferencing, using devices such as medical video cameras. It can improve health care in prison establishments by reducing costs of health care for prisoners, and making the work of prison medical staff more efficient. Taking a prisoner with health illness to a specialist outside the prison poses a danger to prison staff and the community by giving the prisoner an opportunity to escape.

Fairly new in the prison system is the *Global Positioning System* (GPS). GPS is now used for monitoring prisons both inside and outside of the prisons. The GPS tracking unit worn by a prisoner (who can go out of prison facilities) allows computers to find locations at any time

to the precise point. *Surveillance* technology allows prison staff to view several areas of a prison at the same time. Prison officers can also wear personal alarm and location units that allow a computer to track their locations and respond to distress signals by sending the closest officers to the site of the emergency. [5]

Prison staff is also relying on new ICT to help track inmates and former inmates. *Speaker ID* technology can be used to keep track of who calls inmates in prisons and to monitor criminal activity such as escape plans, gang activity, and smuggling of contraband.
In near future, to increase the efficiency of prisoners' monitoring, a smart card, a plastic card embedded with a computer chip, could be used to store all types of information about the prisoner, from medical care to food eaten. ICT has also made it possible for prison officers to remotely open prison cell doors either individually or in unison and to remotely control the flushing of toilets. [5]

Additionally, prisons have been actively using *Closed Circuit Television* (CCTV) technology to make it possible for locations in prison to be remotely viewed. Given that prisons are violent places and a wide range of negative behavior occurs in this environment, it is possible that the prevention of prison disorder is a purpose of CCTV. [8] This behavior is usually engaged in by prisoners and results in physical negative impact (prisoner-on-prisoner assault, prisoner-on-officer assault, sexual aggression, and murder), psychological negative impact (verbal abuse and threats), or economic risks (theft, extortion, and robbery). [8] Other purposes of CCTV surveillance in prisons include the detection of crime and disorder, improving the internal control or acting as a general monitoring tool (Figure 1). [8]

Figure 1 CCTV devices used in US correctional facilities [9]

Radio communications: [7]

Prison managers and staff use professional mobile radio (PMR) systems to meet their secure communications needs. PMR solutions offer useful additional functionalities such as group management and priority management. In addition, the deployment of smart terminals allows radio communications infrastructure to be used for transmitting alarm information.

Prison staff equipped with PMR terminals have access to the following functionalities:

- radio communications,
- hidden alarm button for alarm and emergency backup calls (gradually replacing wall-mounted alarm buttons),
- tamper detector,
- lone worker protection (terminals are worn in the vertical position, and an alarm is generated if they are tilted to the horizontal, i.e. in the event of a member of prison staff falling ill or being attacked),
- integrated GPS,
- patrol management (optional).

Transmission of voice, data and alarms to PMR terminals allows staff to rapidly and effectively locate, characterize and verify emergency situations. Appropriate resources can then be dispatched to manage the incident. [7]

Besides this advantages, ICT application in prison have the following impact on daily activities of prison staff such as less movements, diminish routine tasks, and versatile communication between prison staff and prisoners.

ICT in concert with hardware and software tools as computers, programs form network that is complex and making it possible the processes associated with information such as storage, manipulation, managements, display, interchange, and transmission of data.

E-learning would be used for further qualification of prison staff. By using e-learning systems for their own purposes prison officers become aware of the advantages using ICT in education. [10] E-learning for staff provides innovative tools for necessary continuous qualification and at the same time raises the insight in the benefits of e-learning. [10]

The prisons are also starting to use videoconferencing for interrogations and visitation. Criminal justice officials and prosecutors can now save on travel and avoid standing in line by scheduling videoconferences with prisoners and potential wrongdoers. [5]

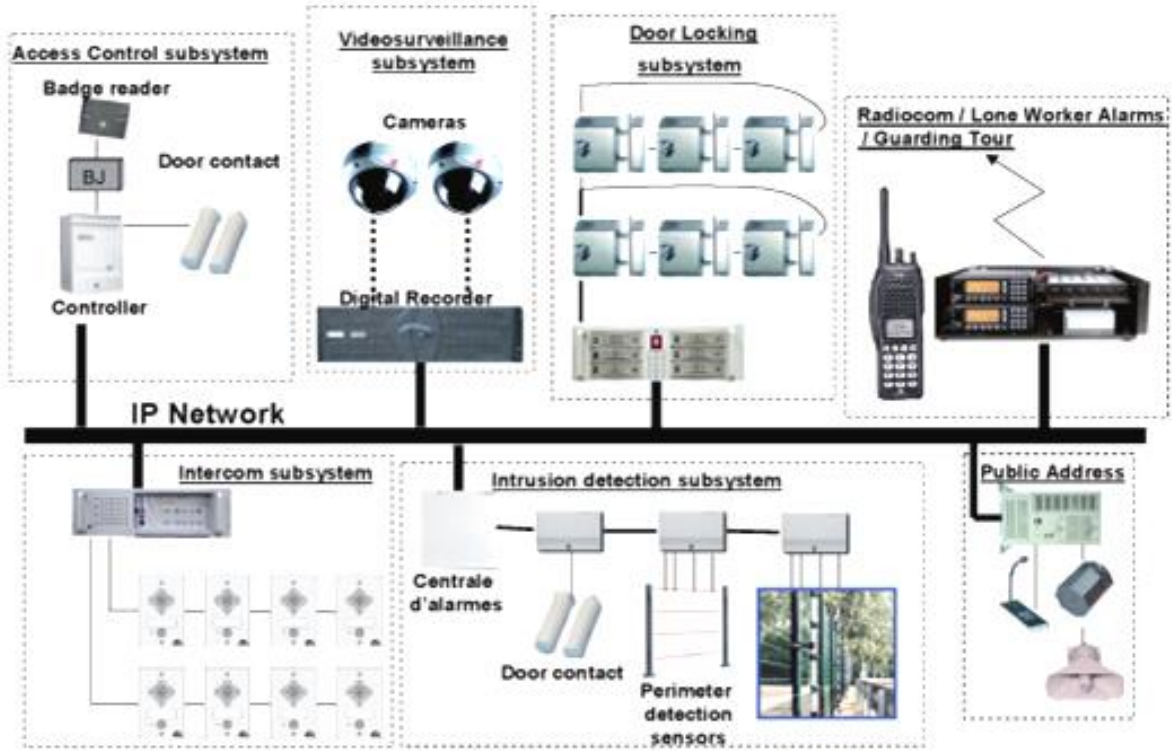

Figure 2 The current safety and security system (French private company and security solution provider) [7]

The system ties together seven subsystems via a secure IP network controlled via the SATHI hyper vision system:

- access control,
- door locking,
- intrusion detection (with information from perimeter detection system alarms, door contacts, wall-mounted alarm buttons, hidden alarms, lone worker alarms, etc.),
- video surveillance (digital system incorporating image analysis capability),
- intercom,
- radio communications,
- public address. [7]

THE USE OF ICT FOR PRISONERS

Society and the prisoners benefit from the continued use of ICT in prison institution. It influence could be seen beyond the prison institutions. The monitoring equipment as electronic bracelets add to tax revenues, reduce welfare costs, and relieve the need to build additional prisons. [10] They also allow a prisoner to retain family and community ties (Figure 3). [10]

Figure 3 Monitoring ankle bracelet [11]

The main area of prison institution there ICT made a vivid footprint is educational programs for inmates. By participating in the programs, the inmates would access to *digital literacy* (*E-learning*). The programs could support prisoners' rehabilitative potential and increases the chances of having more family contacts. [12] ICT programs will increase and equip the inmate's knowledge and opportunities in empowering them. [12]

Human beings need connection with one another. For people imprisoned in prison institution, it can be very important. Regular interactions with family, friends, and supporters can help to alleviate the pain of imprisonment. All of above-mentioned processes could definitely increase the chances of success. To sustain such activities further prison establishments have been seeking new ways. For example, *video visitation*, like *Skype*, allows prisoners to hold video calls with their family members and friends from a personal computer. [11] Video visits provide the opportunity not only to see, but to hear their voices. [11] It has rather emotional effect.

Prison sentences always constitute a deprivation of freedom. But beyond security aspects the aim of the organization is to foster reintegration of prisoners into society after release. According to international conventions and recommendations the prisoners have the same right to education as other citizens. Education helps to develop the personality and character of the individuals. Education plays an important role in the process of reintegration.

All prison systems apply prison education all around the world. It is evidence that rehabilitation is effective in reducing the criminal behavior in at least some of the offenders. Imprisonment is not a panacea for all criminals but an important and in many cases necessary tool for crime prevention. The evidence from the meta-analyses suggests that effective correctional treatment programs appear to follow some basic principles. The effectiveness of any prison treatment and education depend on the level and quality of them. The prison atmosphere, level of free-will and cooperation basically determines the success. Prisons are part of any societies and prisoners are human beings who committed crimes and therefore they have to been punished. But the kind of punishment we use against them is vital. [13]

Considering the growing importance of ICT in society, prisoners should have the chance to use ICT for education and training purposes (E-learning).

E-learning can give prisoners – online or offline – access to learning material from general schools, vocational training schools or colleges. [10] In addition, central examination facilities, which can be reached via secure internet channels, should be used by inmates to obtain degrees which are widely acknowledged by employers. [10]

E-learning for inmates provides a huge opportunity to enhance prison education by broadening qualification opportunities, improving the quality of education and training, motivating (especially young) inmates. E-learning gives inmates the chance to not only to learn subjects of general or vocational education but also provides the opportunity to build up digital literacy. [8] In today's society where digital skills becomes necessary at the workplace as well as in daily life the chance for reintegration of prisoners can be strongly increased. [10]

Some experts emphasize the public has to be informed that the introduction of ICT in prison education is not a "leisure tools" for inmates but a necessary measure to provide an up-to-date qualification which improves social reintegration chances, job opportunities and finally reduces costs in a substantial way by reducing the risk and costs of re-offending. [10]

Mobile phone jammers:

Smuggling of items into prison – in particular mobile telephones – is a major security headache for prison operators. Mobile phones have become a vital tool for escape attempts involving contact with accomplices outside the prison walls. As phones become increasingly smaller and contain fewer metal components, they become harder to detect using conventional metal-detection technology. Carefully targeted jamming of mobile phone frequencies has emerged as the most effective means of combating this kind of threat. [7]

CHALLENGES

Introducing the ICT in multiple prison institutions raises significant logistical and operational challenges. [12] The establishment of reliable and relevant ICT in prisons must be followed by setting up the network of sophisticated hardware and software systems and highly trained specialists.

It also raises the threshold for the prisoners who could and could not afford it specifically when they are participating in educational programs (E-learning). It means the increasing the gap between the "haves" and "have not's". Some prisoners eager to be involved but have a lack of financial and educational (qualifications) skills and capacities to pursue the educational training.

The widespread use of the ICT in prison institutions could bring forward the issue of "digital divide" which are very actual in society. People lacking digital competence are at the risk of social exclusion. [10] It is related not only to prison staff but also to the prisoners.

ICT can lead to gross violations of individual privacy. When the prison staff uses the ICT for tracking and surveillance functions they could have more leverage to change the behavior of the prisoners. It makes the status and rights of the inmates considerably weak and low.

Is it usual for the prison staff to track and control nearly all activities of the prisoners 24/7? Does it mean that the prisoner can lose their individual privacy even when they use toilet of bathroom? Isn't it infringe the universal basic human rights which also applicable to the prisoners? We don't have any clear answers to the questions.

We could see the dominance of two opposite views in society. In one hand, group of people are more optimistic to the future development and application of ICT in prison system. They state that the technological progress could change the overall established paradigm of prison institutions in the positive way. It could not only support and maintain the prison administration and prison institutions' operation quality and availability but also could improve intellectual and mental capacities of the prisoners. On the other hand, group of people firmly oppose the widespread application of ICT in prison institutions. They have overall negative and skeptical attitudes about how the ICT used in prisons. They argue that ICT make the daily routine activities of prisoners more vulnerable and against the basic human rights. At the same time it makes the work of prison staff more routine and inhumane. The outcome would be that the current link between prison staff and prisoner, prison staff and prison staff, prison staff and prison administration, prison administration and prisoner could

be lowered. Otherwise, people to people and human to human relations might become loose and at the end long established prison system would destroyed. To say in other word, there would be a huge loss to community connections which is vital to future of the prisoners after the release.

However, the structure of the prison system creates many barriers to meaningful contact. Imprisoned people often serve their sentences far from home in places unreachable by public transport. [12] Personal visits can place a substantial burden on the visitor, who may have to miss work, pay for childcare, and cover the costs of travel for their loved ones. [12] All these conditions seem to be showing that the use of ICT in prisons more rational and reasonable.

In addition to it, the overall security of ICT in prison institutions is very important. Sometimes prisoners and prison staff are attempting to access or to dismantle the established ICT systems related to security, monitoring, surveillance and event E-learning facilities. In order to prevent and deny such activities in the future the authorities and competent ICT professionals need to develop the rules, regulations, procedures, and all-inclusive hardware/software programs in concert with sophisticated information systems.

CONCLUSION

Despite the growth of the ICT, there are still obstacles to overcome. Prison staff can be resistant to drastic changes. They feel more satisfied with current status quo and are more willing to follow the current rules and procedures. When the reform to be placed the opposing groups become more resistant and intense.

Another reason for hesitancy to adopt new technology is the cost. [5] The setting up of new technologies demand the huge amount of investment. It could in turn bring more burdens to the state budget which is always a "hot issue" for discussion and consideration. [5] Or to say other way, in order to put forward innovative and new technologies additional reliable and significant financial resources must be guaranteed.

Ethical concerns about the rights of prisoners might be another obstacle to implementing new technology. We need to build up the coherent legal mechanisms which could assure that the basic human rights of prisoners and invaluable privacy will be protected. The assurance must come from both the highest and the lowest level of prison establishments.

However, there is no question that new systems and devices are playing an increasingly constructive part in the work of prison institutions. The reason is that it is a modern trend which is shaping the whole aspects of human life. The prison institution itself is a part of it. Thus it must be a part of the modern trend alike.

The use of technology in prison environments has undoubtedly changed the way that prison administration, prison officers undertake their duties. It improved the performance and operation of prison administration and prison staff duties and responsibilities. It brought the situation when the prisoners have the chances of self-realization, contribute to the development of society, and have more ways to come in contact with families, friends and supporters.

The question is that how this new prison environment when ICT influence on all area of prison institution could be more sustainable in coming years and not become more critical and dangerous.

The ICT development is dynamic process. The potential for the application of new technological products and devices is immense. The following is the list of potential ICT which could be applicable in near term:

- A computerized system that predicts potential trouble spots within prisons, allowing managers to assign extra staff or take other actions to prevent violence and other problems. Dubbed *COTAS* (Correctional Operational Trend Analysis System), the system uses information about prisoners — such as age, gang

membership, escape attempts, violent incidents, and medical and psychological conditions — to predict potential trouble spots. [12]

- *Prison Cloud* (Belgium Prison Service) - active participation of inmates to the prison internal and external information system (Intranet and Internet); organizing and supervising the daily activities of inmates into the unified information system. For example, Belgium prison authorities introduced a new web-based, multi-agency, multi-lingual integrated detention management system. It include prison life (prison banking and shopping), communication (internal message system and video-calling), education and training (E-learning, library and job searching before release), legal(access to judicial files) and leisure (movie rental and cable TV service) activities of all inmates in particular prison institution. [15]
- *E-learning* (further progress). There are a lot of opportunities to enhance the level of E-learning in prison institutions - In the future their might be learning applications on mobile devices like notebooks or personal digital assistants (PDA) to provide inmates with appropriate learning material in an effective way. Prisons need pedagogical and technical advice and finally have to decide which educational setting (pedagogical approach, learning content, technology and organizational environment) has to be introduced. From a technical point of view all means for running a secure educational technology in prison can be provided. In addition prisons have to care about organizational means to support secure operation of the system.
- *The security information system in prison institutions* – The proper training of prison staff and prisoners (dealing with technology). The special educational and training programs for them.
- *Controlled access to web content for prisoners* (Internet) - access to web content should be based on three criteria: controls which protect the system from misuse; the quality, extent and nature of the content; and the accessibility of ICT within the prison environment. [16]

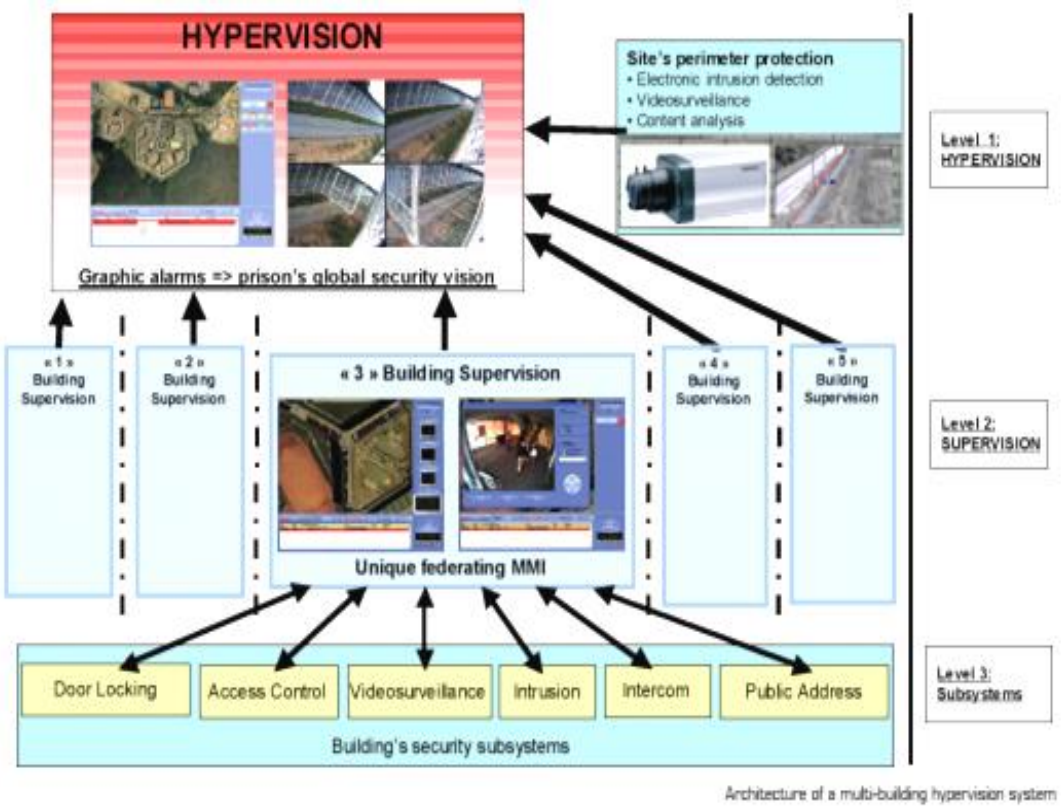

Figure 4 The future model of ICT impact on prison activity- The Fleury Mérogis project (French private company and security solution provider) [7]

The Fleury Mérogis project at a glance [7]:

- 46,000 field sensors (2,000 access points, 500 cameras, 3,300 intercoms), giving a total of 138,000 potential alarm conditions;
- Over 100 operator stations distributed among five supervision sub-servers and one central hyper vision server;
- 4,000 inmates, 1,000 prison officers, total area: 25 hectares.

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