

# THE TRANSITION TO A DIGITIZED BUILDING MANAGEMENT SYSTEM (BMS)

Thierry Colignon briefly explains the choices France made in the field of energy efficiency through the digital revolution in the construction sector.

For more than ten years, Thierry Colignon has specialized in everything that concerns energy management and comfort in living environments. He is currently focussing on the new generation of 'human centric buildings' and recently became the head of Priva France and Switzerland. Priva is the leading company in the BMS (Building Management Systems) field. In addition to supervising the French team, he also works as a Business Developer developing digital services for energy optimization in buildings.

We spoke with him about different subjects, such as the impact of technical management of buildings in terms of energy saving and comfort, the role of emerging technologies in context of French environmental policy and France's ambitious efforts in climate change regulation were discussed.

## **Could you tell us something about the French policy on energy regulation, concerning the development of the BMS market to meet these challenges?**

"Since the signing of Grenelle's environmental agreements, France has been actively committed to environmental issues. The goal is to make future-oriented decisions regarding the environment and sustainable development. This has resulted in two development pillars. On the one hand, this is the development of the various thermal regulations in the regulatory field (Réglementation Thermique (RT)<sup>1</sup>). A decisive parameter has been introduced since RT2005. This legislation dictates the maximum energy consumption per building type and per geographic area. On the other hand, to encourage energy savings. This results in financial incentives being used for voluntary energy saving actions (replacing the boiler, improving the insulation etc). An example of this is the energy saving certificate.

The priority of the French energy policy is the development of renewable energy. This pillar is based on a technical characteristic regarding energy management in a building, namely there are multiple energy sources present in one building. The art is to manage these different energy producers simultaneously. Nowadays we are at the point that we are energy producer and energy consumer at the same time. This complex management of different energy sources must be managed by the BMS, which then basically becomes the 'brain' of the building. Although the regulation of energy supplies used to be fragmented, the BMS is currently developing towards a proactive, self-learning total system in which the heat profile of the building is predetermined by control algorithms. In the end we will all use artificial intelligence."

## **According to you, what is the added value of information and communication technology (ICT) and digitization from the real estate sector in France?**

"We all carry a device in our pocket that offers us functions, such as computer, diary, alarm clock, camera and at the same time it's a camera that we can use to call people with. Of course, we are talking about the famous smartphone. In innovative buildings, it will eventually become possible to have the functions of the thermostat on our telephone, as well as all functions to manage the lighting. With the same device we can also reserve a meeting room or an open space office. The interaction between the building and the user is growing. Now this can clearly be seen in the real estate sector. A building today, is much more than just a block of concrete; because of hyper connectivity the building 'breathes and develops' based on user flows. There

are great opportunities for managing and optimizing work spaces thanks to the multiplication of communication options. Buildings are better utilized, the required surface area for the same amount of people is getting smaller (flexible offices), which is partly an answer to the environmental problems, because we then heat less and cool less. Two things stand out when it comes to digitization. The first is the access to new services, such as booking rooms, relating to the increase in communication capacity. And the second is the computing power, which makes it possible to manage a lot of previously unused data."

### **What has been done so far in France to regulate energy with the help of BMS? What is France doing in general to reduce energy consumption?**

"The efforts are in line with the European guide lines on the energy consumption of buildings, which aims to increase the energy efficiency of buildings with the implicit introduction of communicating control systems and management systems in which the intelligence can be virtual (cloud) or local (edge). Nowadays we talk about BMS, or Building Management System<sup>2</sup>, but also about BOS, or Building Operating System<sup>3</sup>, in which management software is used to manage a building, just like you would install Windows or Linux to use a computer. To come back to the regulation of the energy supply in France, the energy thresholds of the RT2005 / 2012 regulations, which limit the consumption per building and per geographical area, have been radically changed. The prescribed consumption of 120 kW / m<sup>2</sup> per year has been reduced to 50 kW / m<sup>2</sup> per year. Work is currently in progress on the RT2020 regulations, which aims at buildings producing energy themselves (BEPOS). Real estate can produce more than it consumes. BMS and BOS are the driving forces behind this. They supervise the interaction between communicating control systems due to various parameters, such as the outside temperature, the weather forecast and user flows. The cornerstone of connected buildings, the so-called 'smart buildings', is the interoperability between systems, made possible by integrated ICT applications. Communication takes place, among other things, with IoT systems and integrated cloud applications. This will multiply the number of data required for management. "

### **These changes will inevitably lead to new job profiles, especially technical and in energy management of buildings. What do you think of this development?**

"About twenty years ago the profession of integrator with skills in the field of controlled processes, hydraulics, heat learning and more, appeared. These integrators now have to deal with new forms of knowledge. They need to manage and understand computer networks (software) and web communication protocols. Tomorrow we will see two new job profiles within the construction and operation of a building. Since all functional areas of the building must communicate with each other, a 'Smart Building Coordinator' will appear. He will bring these different disciplines together and he needs to catch the essence of all connected data. Given the enormous amount of data, a Building Data Manager to manage and qualify all incoming information in a building will also be needed. "

### **What are the plans for 2019? Is there something special on the agenda?**

"2019 will be a transition year to the RT2020 based on the BEPOS label. This label is promoted by associations supported, for example, by EDF (Électricité de France). BEPOS pilots with innovative BMS capabilities will be developed in national labs to gain experience for the completion of RT2020. What is new is that we not only determine the energy saving based on technology, but also on the geographical location (management of sunlight) and on the person in the building (management of behavior and comfort). This leads to concepts such as 'human-centered building' and environmentally responsible behavior of building users. "

### **What distinguishes the offer from Priva France in the BMS sector?**

"Priva has already earned its spurs regarding BMS as a leader in this field. The Priva offer is characterized by two things. First, 'speed & ease': we produce materials, logistics and ITC tools that make things easy for all users (installers, maintenance companies, integration partners, end users). We make the material not only focusing on control capacity, but also based on user-friendliness. Systems for optimizing energy consumption need to be straightforward and efficient. Secondly, Priva has chosen for digitization in current developments regarding the automation of energy comfort management. There are pilot locations in Germany and Switzerland and soon also in France, in which we use terms like self-learning and 'machine learning' (self-learning / predictive control algorithms). This mainly has been made possible by

the cloud. Priva is committed to providing building users with a healthy indoor climate in which they feel completely at ease. The goal is the well-being of the users of a building."

WOULD YOU LIKE MORE INFORMATION?

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**Thierry Colignon**

Business Developer



+33 4 50 07 09 48



+33 7 83 49 74 72