

## Editorial – Issue 37 – October 2022

The formation of Silicon Valley, icon of technological innovation, was based on paradigms diametrically opposed to those advocated in so-called traditional management companies. There were four fundamental precepts engraved into the personality, character, mentality, and culture of people that became the driving engines of technological advancement in the age of the digital revolution. For the uninitiated, these four precepts may sound like out of place, especially since, even after fifty years, we still live in an environment that is totally averse to innovation. The four precepts are: 1) authority must be questioned; 2) hierarchies must be questioned; 3) nonconformity must be admired; and 4) creativity must be stimulated. There were two other salient features: there were no fixed working hours and no dress code. When telling the story, Walter Issacson, in his book "The innovators", states that it was this way of working that allowed the creation of an environment conducive to innovation, revolution and technological evolution.

Why did Silicon Valley sprout on the west coast of the United States, on the other side of where the most famous technology companies were based, which enjoyed an unquestionable reputation in their business? One of the reasons is that new innovative initiatives should stay as far away from the current culture as possible so that they are not contaminated by the bureaucratic mentality and the day-to-day business demands of East Coast corporations. This was exactly the case at Xerox PARC (Palo Alto Research Center). An administrative unit focused on innovation must be segregated from day to day, headquartered in a different location, have freedom in terms of processes and the way it functions and, finally, be independent.

Unfortunately, the lessons from Silicon Valley seem to have had no influence on Brazilian business culture. This is so true that, if an executive of a company hears the four concepts on which the enterprise was formed in isolation, it will sound like madness, something completely devoid of reason. This attitude naturally extends to companies in the electricity sector. If it weren't for the compulsory incentive programmes, especially the R&D Programme of the national agency for electrical energy (ANEEL), the sector could possibly be far below what it is in terms of technological development. Another sign of the anti-innovation attitude on the part of companies in the sector is that the R&D programme does not receive the due institutional value, much less do those entrepreneurs who venture into innovative achievements in search of new products that bring real differentials get support.

The day-to-day activities of a company require constant care, compliance with established rules to ensure safety in actions and rigour in procedures. This is essential to guarantee that everything runs smoothly in the management of the company. Innovation-oriented activities, on the other hand, require an attitude whose main characteristics are opposed to these. They are strongly based on experimentation, aiming at the generation of prototypes, which precede actions that are strongly rooted in the business culture, such as opportunity analysis, market attractiveness assessment, market research, financial analysis, and technical and financial feasibility. An environment conducive to innovation favours experimentation, as opposed to what is important for the environment in which the vast majority of technical and management activities is carried out.

What drives innovation is experimentation free from the other concerns of business planning and management, together with the motivation to create solutions and solve complex problems, the freedom, both to find the best way to work, and to act flexibly around processes and, finally, something that may sound strange in the business world, to the dream of individuals who seek to carry out works that bring a differential. All these characteristics, in contrast to those necessary for other business activities, which are equally important, corroborate Silicon Valley's initiative to segregate environments destined to the two types of activities, creating a culture that is effectively conducive to innovation. It can be clearly seen that attitude is more important than any incentive mechanism, which, naturally, is also of great value, especially to mitigate the problems intrinsic to the lack of an adequate attitude towards innovation.

Speaking of incentive mechanisms, probably the greatest catalyst for the technological evolution of the electric sector is the ANEEL R&D Programme, which is in the process of being renewed. The normative resolution ANEEL number 1045, of 4<sup>th</sup> of October 2022, establishes the procedures of the Research, Development, and Innovation Programme (PROPDI) for the electricity sector. As the programme matures, which it has been doing for more than



two decades of existence, its body becomes more robust. The new resolution basically seeks to focus on practical results, and this includes the profitability arising from project results. There will be a five-year strategic plan for innovation in the program and the evaluation will be multi-attribute, which will require even more maturity on the part of companies. The new item, called "instruments of innovation", defines the possible ways of applying the resources, which include R&D projects, start-ups and calls for the so-called strategic projects, in addition to management programmes. Acceleration and scalability of start-ups can be contemplated, which can greatly help to achieve results obtained in earlier stages of the innovation chain.

The 37th issue of Espaço Energia is composed of three papers. The first one reports the development of a tool that helps in energy diagnosis in administrative buildings. Energy efficiency has gained more attention due to recent world events, high fuel prices, military conflict situation and environmental aspects. The reported tool is intended to provide ease of use and assist in the operationalization of energy diagnosis. The second paper, written in English, deals with an important issue in hydrothermal dispatch planning, namely, the flow time series. The work analyses methods for determining the Hurst exponent, an important parameter in time series, in 148 hydroelectric plants in the national system, presenting a map of the parameter and making important conclusions about its behaviour, such as greater persistence in the central region of the country, and a tendency to decrease downstream in the Paraná hydrographic region. The third paper deals with the application of electrochemical testing techniques to evaluate steel corrosion in reinforced concrete specimens when immersed in ammonium sulphate. The relevance of the work for the energy area lies in the fact that reinforced concrete is applied in power plant dams, structures of substations and transmission lines, among others. The paper presents the conclusion that ammonium sulphate is highly corrosive and makes an important observation regarding the techniques used in the analysis.

We hope that the reflection on innovation-driven environments through a brief comparison with what happened in one of the most successful cases in the history of technological development will be inspiring to the readers of this journal. We are grateful for the interest and dedication of the authors, the ever-present and selfless work of the referees of the editorial board and all those who have systematically helped in the processes. We especially appreciate the interest of readers. We hope that the reading will be useful to you and can contribute to approaches for the improvement of the electricity sector.

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