

Shortage of skilled workers, automation and new processes

How does digitalisation change Facility Management today?

Is it possible for digitalisation to compensate for the challenges linked to the shortage of skilled workers in the field of facility management? Where will human beings be replaced by robots or automated processes in the future? How does the sector and the facility services need to change, in order to effectively put to use the new technologies? The following article deals with those questions.

New Technologies

BIM, virtual oder augmented reality, artificial intelligence, Internet of Things (IoT)– digitalisation and robotics are changing today's facility management processes. Many of these new technologies are already being used or currently being tested or piloted. When one takes a look into current university publications and research papers, it becomes apparent, that these are just the beginning of a far-reaching development, potentially leading to a fundamental change in facility management as a whole. The market of the so-called prop-tech companies (PropTech = property + technology) is continually growing; They are the ones who take forward digitalisation in the real estate industry. In addition, the big facility service providers themselves are creating new digital ideas and business models for tomorrow's facility management. The new applications are confronted with high expectations: On the one hand, principals and users are hoping for higher levels of transparency and process efficiency; On the other hand, service providers like to increase flexibility, whilst they count on placing new content and special offers.

Man as the factor of production

Man as the factor of production defines and shapes facility management like almost no other business related service. More than 75 % [1] of production costs arising in facility services account for staff costs. Capital costs, resulting from investments in machinery for example, do not have a considerable impact. A large number of own tenders, implementations and audits of facility management services show, that service quality – and thus the resulting customer satisfaction, crucially depend on those people, who are actually providing the respective services on the ground. Within this context, it is of no relevance, whether these people are either working for a bigger or smaller service provider, or rather a supplier with a technical or infrastructural focus.

Approx. 4.7 mio people in Germany are currently working in the facility management industry. This number accounts for 10% of the total working population.[2]. Yet or precisely for that reason, the issue of more and more ageing workforces, in addition to a lack of suitable young talents, begins to show in our industry. While the average age within the Federal Republic is 43.4 years, FM employees are 51 years old on the average. [3]. Numerous companies lament the lack of junior staff; Moreover they observe a brain drain towards the industrial sector.

A study by IFMA and RICS foresees up to 2030 a shortage of skilled workers of 1.2 mio in the real estate business. [4]. Digitalisation of real estate processes is likely to offer solutions to these personnel changes, since a facility manager's field of activity will have changed fundamentally by then. Control and operating jobs done by and on robots will take up the place of former operative tasks. Instead of carrying out patrols and preparing reports and documentations, the facility

managers of tomorrow will keep busy in evaluating statements of artificial intelligence and IoT platforms. With the objective to better respond to the information demand of the client, the user and the own employees – despite a high information density - huge amounts of data will need to be analysed, interpreted and cleaned up. The overall aim is to react more quickly and to increase availabilities, ultimately leading to the emergence of new activity fields. Experts will try to further develop potential applications of digital technologies, such as the designing of systems tackling future challenges, like for instance accessibility and sustainability. What is required, are new approaches to increasing transparency for clients and users. In the opinion of the Federal Labour Office, 50 to 70 % of facility management activities are already automatable. [5]. A BCG study shows [6], that in the context of business related services (services, which are exclusively used by companies, such as facility management) and cleaning, a total of 800,000 jobs will be replaceable until the year 2025.

State of Digitalisation in FM

For decades, providers of CAFM-Software have been praising the benefits of digitalisation in connection with the documentation of buildings, technical installations and processes. In the real world, owners as well as operators are still confronted with analog filing cabinets with often incomplete and faulty revision documentations. As a consequence, consultants are forced to make a full inventory prior to almost every tender they are preparing; They often find patchy data. Service providers need to fulfil the complex task to reconcile specifications with the building's inventory, as well as the existing installations in the asset for almost every client. Paper mountains made of catalogues, offers and work assignments are piling up on top of the facility managers' desks. In short, in many companies, the possibilities, that lie within the solutions available, are not being in the least exploited. There are multiple reasons for this. Those are ranging from technical deficiencies, such as lack of performance or missing, respectively dysfunctional interfaces, to processes, that are yet to be adapted to the digital world and thus - finally to the human factor, ever distrustful of new technologies. Another point is legal requirements on data protection, that are upsetting companies and thus further delaying digital progress.

What needs to change?

The development and application of digital solutions in facility management requires hardware investments, just like in sensor technology, robots, in software, such as analysis platforms of IoT-data and cloud solutions. Compared to other sectors, research and development are significantly underrepresented – due to lack of interest plus money. Today, external service providers are rendering more than 50% of all facility services. The terms for such contracts range between two and five years. Most tenders end in the contracting of the lowest bidder. As a result, the service provider's financial leeway hardly allows for investments in digitalisation, especially since the costs for customised solutions need to be recouped within the short contract period. Particularly in the case of infrastructural services, where staff is paid close to minimum wage, such expenses would not pay off. The principals aim remains to minimize capital costs, that are not relevant for their core processes by way of outsourcing services. When it comes to institutional real estate investors, there is little incentive to invest as long as costs cannot be considerably reduced during a relatively short amortisation period.

Conclusion:

In order to overcome such barriers, real pioneers are needed in the industry – on both sides – among clients and contractors, who are willing to test, apply and further develop new methods and techniques in the framework of long lasting partnerships. The properties' owner-occupiers likewise play a central role therein. New service and contract models with less emphasis on mere performance and results and with a stronger orientation towards use and benefit or product quality in letting models such as 'WaaS' (*Workplace as a Service*), can help to support the development of new technologies. The core idea of a future-oriented FM model could be the provision of a comprehensive service kit, that is tailor-made to all needs and uses for each and every workplace. What is important here, is to quickly identify individual needs by means of automation. As a next step, the identified needs have to be analysed and prioritised, depending on the circumstances, in order to operate the workplace on the basis of flexible service levels, contrary to the former cleaning and maintenance activities at fixed intervals. All new technologies will need to be proven in practice and demonstrate in start of production, whether they are in fact able to compensate the current and future lack of skilled workers and become an integral FM in the years to come. Notwithstanding the above, FM will surely remain dominated by humans in the future, thus leading to an increasing relevance of education and recruitment of skilled workforce.

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