RITTERWALD

Immo vations

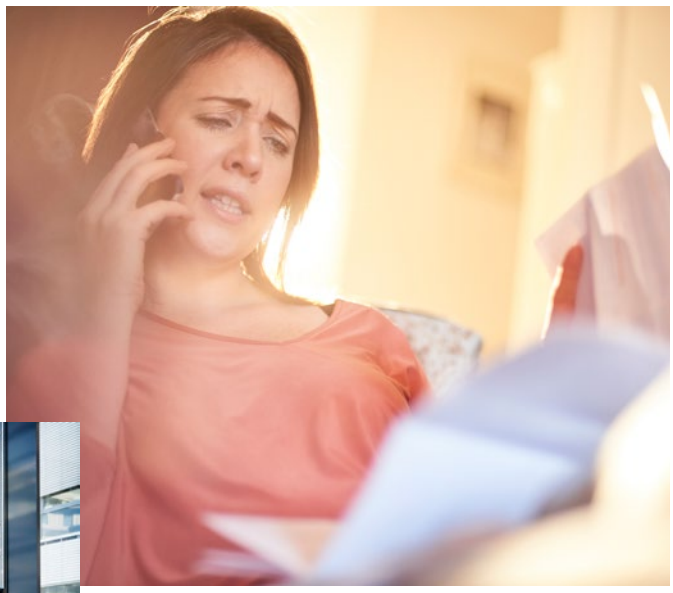
Fresh Impulses for the Real Estate Industry

Issue 01 · 9/2019

New Ways of Creating Value

New Technologies

New Practices



IMPRINT

Responsible: RITTERWALD
Unternehmensberatung GmbH
Dr. Mathias Hain, Lutz Rittig
Kurfürstendamm 22, Berlin, Germany
Phone: +49 (0) 30 / 609 85 82 40
Fax: +49 (0) 30 / 609 85 82 42
Email: info@ritterwald.de
Website: www.ritterwald.de

Design: buerominimal.de

Print: Pinguin Druck GmbH,
Marienburger Str. 16, Berlin, Germany

Picture credits: Unless otherwise
noted, iStockphotos by Gettyimages

Contents

Dear readers, business partners and friends of our company,

Ever since Dr. Mathias Hain and Lutz Rittig founded RITTERWALD management consultancy in 2011, our company has been continuously evolving. We have grown with our customers, received new impulses from employees who've joined us and drawn fresh inspiration whenever possible. Our goal was and always will be to put our clients firmly at the heart of what we do, to offer them the best possible service and to be an exciting and inspiring place for our employees to work.

As part of our evolution, we began publishing articles at regular intervals in 2016. Some of these have been published in the trade press, for example in "Lünendonk Magazin" and "Die Wohnungswirtschaft". Most of the articles, though, are published on our website and on our social media pages, primarily on LinkedIn and Xing. It all adds up to a collection of exclusive knowledge that we are happy to share with you. For us, these contributions are a reflection on work we've done and an assessment of new trends and technologies in the real estate industry. In the articles, we consider the bigger picture and seek out exciting developments and concepts beyond our industry. A further source of material are our speaking engagements, in which context we can regularly be seen at industry conferences.

The articles published over the years have been edited for you in this brochure to make them available in condensed form. They testify to our insight into the current issues of concern to our industry. At the same time, we also express our opinions in them and deliberately endeavor to take a stance on the topics covered.

The articles stem from a wide range of sources, so while initially it may have seemed like there was not necessarily a logical relationship between them, upon rereading the articles we noticed a common thread running through all of them. This common theme is innovation. Our articles are about new ways of creating value, new technologies to use and new practices to adopt, resulting in different ways of working and alternative approaches companies can take. These three dimensions are the leitmotif of this brochure.

New ways of creating value naturally revolve around digitalization as the first step. On this subject, the first article deals with how real estate companies can spot potential and pin it down. Startups operating in this sphere, now referred to collectively as PropTech firms, are another obvious element of any discussion of new ways of creating value. But there are also new strategic approaches that can be adopted: asset deals enable inorganic growth in the property

Photo: RITTERWALD

Dr. Mathias Hain, Dr. Christina Welsch, Lutz Rittig, Matthias Kaboth

management market, and homecare is one of the growth markets in our industry. A possibly unexpected way of adding value is with the much-overlooked business of delinquent tenant receivables. Finally, we touch upon two topics that are currently picking up a great deal of momentum: direct electricity supply and e-mobility. Here, too, there are new ways for real estate companies to create value for their customers, investors and shareholders.

New technologies are also a factor of constant change. We have described, analyzed and assessed two examples in our articles: blockchain and BIM (building information modeling). What both technologies have in common is that their potential is by no means exhausted. The coming years will continue to bring changes in this area and new use cases will emerge at the interface between real estate management processes and these technologies. It's notable that there are large numbers of startups using these two technologies alone to develop attractive products and services for the real estate industry.

New practices are all about new ways and methods of working, some of which are inspired by startups. Foremost among them is the "lean", "agile" and "scrum" way of working from the world of software development, which has since become widespread in the business world, including in the real estate industry, largely through the influence of the book "The Lean Startup". There is also the now widely used "Golden Circle", the communication tool developed by Simon Sinek. We explain both concepts and discuss use cases for the real estate industry, focusing in particular on change management. Other topics concern energy-efficient neighborhood development in the smart city context and the right way to build digitalization teams.

Finally, managing director and company founder Dr. Mathias Hain offers his personal outlook on future developments in the real estate industry.

Some of our articles were written in collaboration with our clients or other partners. Feel free to contact us if you have any particular topics on which we can jointly develop a stance.

We hope that these articles will give you some useful suggestions to consider for our own business, and we look forward to sharing ideas and continuing to work with you.

Sincerely

Dr. Mathias Hain Managing Director	Lutz Rittig Managing Director	Matthias Kaboth Associate Partner	Dr. Christina Welsch Principal

Everything's Going Digital

Digitalization in the Real Estate Sector – How Housing Companies Can Identify New Potential

Have you heard of Leverton or nuki? Do you know what HUME VALUATE means? If so, then you must be among the real estate pioneers. Having already ushered in the era of FinTech and InsurTech, digitalization recently set its sights on the real estate sector, with the result that the digitalization and PropTech trend is huge in the industry right now.

Digitalization – from buzzword to cultural shift

Digitalization is on everybody's lips at the moment and it feels like we are hearing daily news of some corporate giants like Siemens or Volkswagen coming out with a new digitalization strategy. But what does digitalization actually mean? To clear one thing up right from the start, digitalization means more than just the use of digital media. Digitalization has an impact on many different levels (see Fig. 1) and therefore deserves comprehensive analysis. A full 92% of residential real estate companies in Germany firmly believe in the need for the real estate sector to digitalize. Against this backdrop, 72% of firms have already begun thinking about a digital business model that goes above and beyond their core business.[1] Only 31% of all residential real estate companies have a fundamental digital strategy for all segments of their business.[2] Housing companies therefore run the risk of falling behind on some of the many societal and technical developments. To avoid this, they will need to ramp up their digitalization efforts in various areas of their business. At the moment, traditional real estate companies are investing a mere 5.5% of annual revenues in digitalization on average. As revenues rise, digitalization investments tend to fall as a proportion of sales.[3] There is considerable potential to be reaped by residential real estate companies, both on the cost and the income side, owing to the low level of digitalization prevalent today.

Operational optimization

From a business perspective, digitalization firstly involves changing and optimizing existing company process through the application of innovative systems (software, hardware). Keeping physical document files, sending faxes and posting letters through the mail are already obsolete activities, at least from a technological point of view. There are, of course, situations where these non-digital methods are unavoidable. What you need to do is identify these and minimize them. In all other situations, consistently digitalizing your business processes not only makes life easier for your employees, it also makes everything more transparent.

You can offer so many advantages to anyone who needs access to your files by having a digital tenant file which is searchable at a click, easily readable with no messy handwriting, and not physically stored in the archives, where they would need to go and search for it. And you can rethink many of your internal processes along similar lines, making the working day palpably easier for those involved and creating an organization that is more transparent and more easily manageable all round. Even your commercial and technical support services hold considerable potential for digitalization. Tenant inquiries (such as damage reports) can be recorded and processed digitally. This ultimately allows you to have your tenants' entire rental history, from first property viewing to latest utility cost billing, handled digitally from end to end. Because of course, all of your internal business process can be digitalized as well – from accounting to purchasing to human resources management.

As you can see, digitalization demands some serious thinking about your corporate processes and corporate culture. The majority of residential real estate companies are still in the early stages of digitalization. The first step is

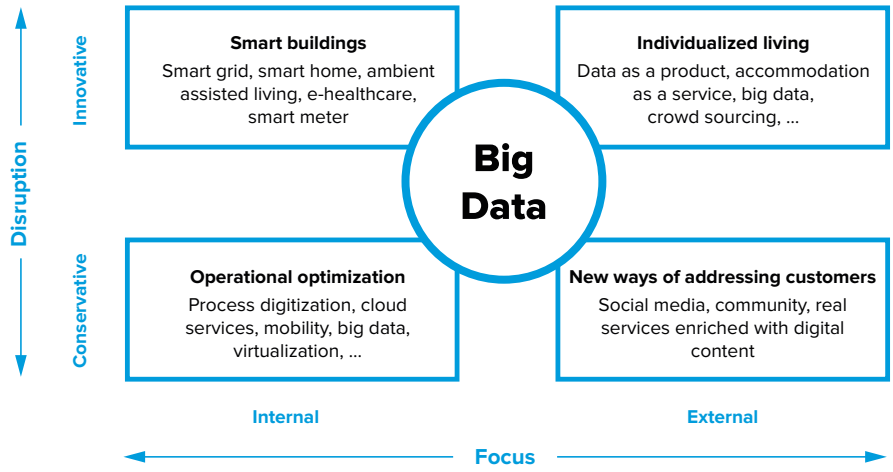


Fig. 1
The innovation matrix – Areas to be incorporated in a digitalization strategy (Bölting et al., 2016, p. 8)

to bring all currently paper-based business processes into the digital realm, making them faster, more efficient and more convenient in the process. This applies to all aspects of rental property management.

Smart buildings

The application of innovative technology enables us to create intelligent systems which can be used to optimize building construction and building automation. The range of topics affected here spans everything from increased energy efficiency through the use of a smart grid to the available smart home/ambient assisted living (AAL) systems that make residents' everyday lives easier and also offer added convenience in the home. What AAL systems can do, for example, is enable disabled or elderly people to live independently in their familiar surroundings. According to a study by the Berlin Institute for Social Research, 58% of female senior citizens and 37% of male senior citizens would use AAL systems if it meant they could continue to live independently.[4] The various components in these systems support residents with everyday activities (like cooking, going to the bathroom at night) and also offer round-the-clock security for users and their family members. Any deviations from normal day-to-day activities are recognized as potentially dangerous situations (without a panic button and without cameras) and the appropriate parties (such as nurses) are automatically informed.

Individualized living

Digitalization is fundamentally changing the habits and needs of tenants, a fact which is causing them to question their existing living and working arrangements. Innovative tenancy models which view accommodation as a service will serve to modify the traditional landlord-tenant relationship. In the future, for example, it will be possible to sign a rental contract with a service provider who then takes on other services for the tenant (such as looking for a property, planning the move, letting the property). Among traditional real estate companies, 56% view the Internet of Things as a future trend in the digital technology sphere.[5] In particular it will be instrumental to individualized living with its capacity to make the things that people use every day in and around the home completely connected through the use of microelectronics. Not only that, significant data can also be gathered about users through the connectivity of the different objects they use. The Internet of Things requires a highly developed network infrastructure, which will need to be implemented in the buildings at the appropriate level of quality.

New ways of addressing customers

Currently, 98% of residential real estate companies operate their own website, 22% use an e-mail newsletter to communicate, and only 5% have their own app. None of the real estate companies run their own blog.[6] Digitalization offers faster and more efficient ways of keeping in touch with tenants and, from a real estate perspective, developing additional revenue potential. Tenants can be offered a wide range of additional services primarily aimed at making tenants' lives easier, but which also enable the real estate sector to participate in the profits through an affiliate model.

One of the options is to offer community services. The good old notice board can be digitalized in order to offer a range of additional, up-to-the-minute information on anything from the garage sale down the street to special events at the local preschool.

And real estate companies also get the opportunity to publicize specific offers for their tenants from companies in the local neighborhood. Say, a new restaurant that has

With a tenant app, housing companies can communicate with tenants in new ways and enable them to use a range of services – from checking their rent account to reading the notice board.

just opened and is keen to get its name out there. Or a local care service that wants to make life easier for senior citizens. Services like these can be promoted to tenants through smart phone apps and the like. Vandal-resistant computer terminals can be made available for all the tenants to use. Real estate companies themselves could introduce an affiliate model to realize additional earning potential here.

In a nutshell: real estate companies should exploit their digital potential

This short overview shows two things quite clearly: residential real estate companies still find themselves ill-prepared for the digital future despite the fact that the home (along with the workplace) is at the heart of our digital society. But the challenges can be overcome. Firms just need to acknowledge the scale of the task and have the will to realize sustainable digitalization strategies. And then real estate companies may well find themselves among the industry pioneers.

Everything about tenants is growing increasingly digital. The Internet of Things means that buildings need to have a highly developed network infrastructure at an appropriate quality level.

1 See DMK (2015), p. 14.
2 See ibid., p. 14.
3 See Scheidecker et al. (2016), p. 11.
4 See Krüger-Brand (2009), n. pag.
5 See Scheidecker et al. (2016), p. 14.
6 See DMK (2015), p. 13

Literature

Bölting, T. et al. (2016): Digitalisierung in der Immobilienwirtschaft – Chancen und Risiken. Bochum: InWIS.
DMK (2015): Mehr Chance als Risiko - digitale Transformation in der Wohnungswirtschaft. https://www.dmk-ebusiness.de/f... (01.11.2016).
Krüger-Brand, H. (2009): Ambient Assisted Living – Assistenzsysteme: Technik hilft auf Schritt und Tritt. http://www.aerzteblatt.de/arch... (01.11.2016).
Scheidecker, L. et al. (2016): Einsatz digitaler Technologien in der Immobilienwirtschaft. http://www.zia-deutschland.de/... (01.11.2016).


09265
kWh
WATTHOUR METER

Wired, Connected, Decentralized

PropTech – The Real Estate Industry in Transition

The real estate industry is historically a rather conservative sector characterized by gradual evolution. Yet technological developments and the billions lying unused in the coffers of property market leaders could set off a potential wave of innovation.[1]

The industry has seen the sign of the times and is debating the potential for cooperation between the old and new economy. A word that often crops up in this context is PropTech, which stands for property technology and denotes digital products for the real estate sector. Events on this topic are staged regularly, including the MIPIM PropTech Summit in New York and FUTURE: PropTech in Berlin.

But what exactly is PropTech? This article illustrates the different segments that digital solution providers are split into and explains their importance for the real estate sector.

PropTech & co.

For some years now, FinTech has been one of the most frequently used words in the financial world. FinTech (financial technology) companies develop innovative business models for the financial sector. Not a day goes by without a new business idea coming out. These include technologies like online payment systems, crowdfunding, financing platforms and online stock exchanges. FinTech companies rarely offer dedicated solutions for the real estate industry (with the exception of crowdfunding for real estate projects). And yet there are some overlaps between FinTech and PropTech.

The Venn diagram[2] in Fig. 1 shows real estate FinTech as a hybrid of FinTech and PropTech, whereas smart real estate and the shared economy are largely or completely separate from FinTech and represent (pure) PropTech. To provide a better understanding of the individual areas, a brief summary and definition of each of the three categories is given below, followed by a detailed consideration of real estate FinTech, smart real estate and the shared economy. The main aim here is to examine the possible innovations and changes that lie in store for the real estate sector.

Real estate FinTech refers to software-based platforms that optimize the buying and selling of real estate assets. Such assets may be classic (individual) properties or fund shares, or they may be debt and/or equity capital invested in real estate. Platforms may be limited to providing information, or they may include the entire sale/transfer process.

Smart real estate is about software-based platforms that facilitate the running and management of real estate properties. The platforms may contain information on (individual) properties or entire cities. Advanced smart real estate platforms already enable the active management and control of real estate portfolios. Such platforms are mainly there to support asset, property and facility managers in their day-to-day business.

The real estate shared economy describes software-based platforms that facilitate the day-to-day use of real estate properties. Shared economy solutions deal mainly with usable space and buildings, including offices, logistics facilities, apartments, etc. Here, too, the spectrum ranges from pure information provision to active management of rental or transaction payments. These platforms focus on the active use of the real estate by residents/tenants.

Real estate FinTech

Classic FinTech and real estate FinTech are both primarily concerned with the support and realization of transactions. In contrast to classic FinTech, which deals with trading in financial products, real estate FinTech is all about trading in real estate. Above all, the very varied and widespread demand for housing combined with the diverse yet opaque supply situation offers huge potential for greater efficiency. There is currently no dominant mechanism in place to bring

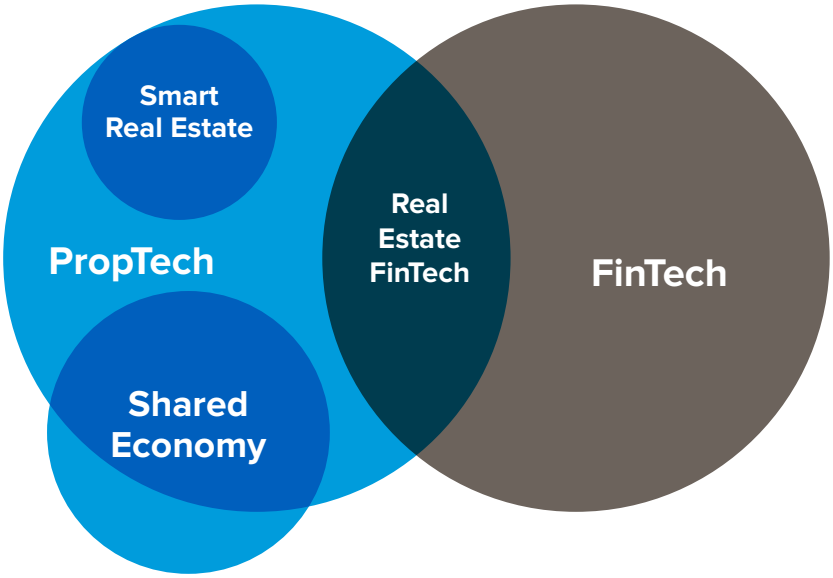


Fig. 1:
Differences and overlaps between PropTech and FinTech

supply and demand together effectively. On the contrary, the numerous independent real estate agents in the market benefit from the information asymmetry: brokers have no interest in sharing their market insights publicly. Due to the considerable size of individual transactions, they can still generate a high level of profit with a small number of transactions. However, there are already some companies striving to put an end to the information asymmetry by making information publicly available. The American Zillow Group, founded in 2006, for example, offers consumers the possibility to obtain information on property listings through its website without using the services of a real estate agent.[3] Zillow Group does still cooperate with brokers and sends them promising properties direct. Nevertheless, such providers are helping break up the established information asymmetry in the real estate sector long term.[4] Trulia (also part of the Zillow Group), Rightmove and Zoopla as well as ImmobilienScout24 are further examples of real estate FinTech information providers in the USA, the United Kingdom and Germany that are expected to precipitate the reduction and consolidation of traditional real estate agents.

According to Savills and the World Bank, the global real estate market is worth some USD 217 trillion, 75% of which is locked up in home ownership. The annual volume of real estate transactions in 2007 amounted to approximately USD 683 billion, rising to around USD 900 billion in 2015.[5] This represents an annual trading volume of about 0.3–0.4% of the total property stock. The global real estate portfolio represents more than half of all established assets, but is also very illiquid. This estimate disregards the average additional costs of 3–6% for a transaction, including charges, brokers' fees, due diligence, contracts, legal valuations and advisors' fees (excluding taxes and failed transactions).[6] Jeremy Sicklick, co-founder and CEO of San Francisco firm HouseCanary, further found that it takes an average of 100 days for a property in the US to change hands.[7]

In a market calculation, if we assume incidental transaction costs of, say, 4–5% for the annual buying and selling of approx. USD 1 trillion of the global real estate portfolio (approx. 0.4% of the total market of USD 217 trillion), the resulting market volume comes out at USD 40–50 billion. This market is currently shared by advisors, real estate experts, lawyers and accountants. If the real estate FinTech industry is able to make real estate trading "just" 10% more efficient, this would immediately uncover another USD 4–5 billion in potential revenue. This calculation is enough to highlight the immense potential for the real estate FinTech sector and any companies that manage to establish themselves as first movers here. Furthermore, the calculation completely ignores the potential inherent in rising transaction volumes owing to declining illiquidity and faster transactions (<100 days). According to a forecast by Catella, the annual volume of transactions in the European residential property market is currently already growing at more than 5%, from EUR 37 billion in 2016 to EUR 39 billion in 2017.[8] Reasons cited for this growth include urbanization, capital availability, migration and demographics. However, if better and more transparent transaction management combined with lower costs as a consequence of the factors mentioned above led to a higher annual trading rate, the result would be further multi-billion-euro growth in the real estate FinTech industry.

Smart real estate

What exactly are "smart" buildings? Smart buildings combine their historical purpose of providing space for their residents/users with the integration of new technologies to increase efficiency, e.g. in regulating the heating of the space. For firms like Apple, Alphabet (Google), Microsoft,

Amazon and Facebook, this is already a decisive factor in the selection/optimization of their properties.[9] What all five companies have in common is their need for huge amounts of power in order to provide their services. The growing dominance of cloud computing, for example, compels Facebook to build enormous data centers with fiber optic networks that require functional access to large amounts of electricity.[10]

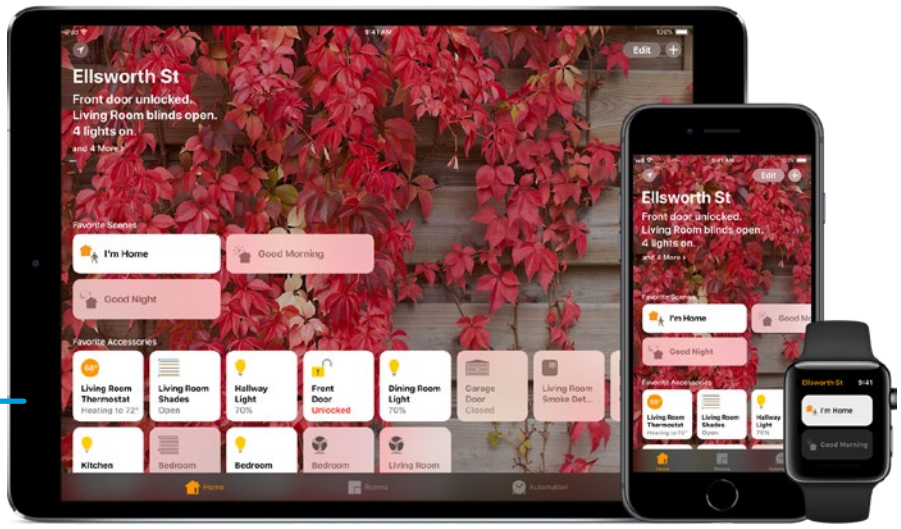
Furthermore, a smart building is one which ensures sustainable use of input resources (water, air, power) and a conscious and responsible approach to output resources (waste water, emissions). Expectations of users and investors have changed significantly over the last 10–15 years when it comes to the costs and functional aspects of smart buildings. In the past, the traditional lease agreement between owner and user was dominated by the rent for the space itself, with utility costs being more the responsibility of the tenant/user. Owing to the increased demands of tenants/users and the innovations within smart buildings, the responsibility for optimized property management is gradually being shifted to the owner/manager of the property.[11]

All the values measured in a smart building can be read conveniently and in real time via computers, tablets and smartphones. Not only does this improve the user's awareness of what they are consuming, it can also be used to control the building infrastructure more efficiently. Google already bought into this growing market in 2014 with the acquisition of Nest (producer of smart thermostats).[12] Two years later, Apple launched its Apple Home smart home ecosystem running on iOS 10. The aim with Apple Home was to establish it on the integrated home speaker market as a rival to Amazon's already successful Alexa technology.[13] These products make it clear that smart building technology has long since arrived in the consumer's living room and is no longer only of interest to the industry. METR Building Management Systems GmbH is one of the latest examples of the growing relevance of smart buildings in Germany. METR GmbH achieved a top five ranking in the first "Smart Up the City" innovation award created in 2017 by Berlin-based residential construction company degewo AG.[14] METR GmbH is laying the foundations of a digital infrastructure for residential and public buildings by connecting up all intelligent devices and technical systems in a bid to make buildings smarter.

Despite these significant steps toward smart buildings, smart real estate is still in its infancy. Most existing residential buildings were built without any thought to the integration of technology, and the modernization process will take years to complete. However, there are some factors that may allow for a faster development of the smart real estate sector. On the industrial level, for example, the incumbent electricity suppliers can hardly keep up with the rapidly growing energy demand from data centers, and new developments will be absolutely crucial.[15] In addition, more and more companies are committing to reducing their carbon footprint, such as Facebook, which has announced plans to operate all of its business locations 100% from clean and renewable energy sources.[16] This yields enormous growth potential for companies with innovative ideas to increase efficiency and could help the segment evolve faster. At the same time, private tenants are becoming more and more open to new technologies and are loving the possibilities they have of controlling and optimizing their consumption and ultimately reducing their costs via their smartphones. In the future, smart real estate could even help optimize entire neighborhoods, including schools, libraries, hospitals and power plants. Maalka is a company that is already working to make the Japanese district of Kashiwanoha in Chiba Prefecture and Pearl District in Portland, Oregon, USA, more sustainable and environmentally friendly through smart real estate technologies.[17]

The real estate shared economy

As the name suggests, the shared economy in the real estate sector is primarily concerned with the sharing and/or



Apple is among the companies to have launched a smart home ecosystem – called Apple Home – on its iOS

		Registered Assets/ Service Providers	User Base	Traded Amount (per annum)	Countries of Operation
Transportation As a Service	Uber	160 K	8 M	$11 B	68
	lyft	60 K	NA	$1.2 B	1
Home/Office Sharing	airbnb	2 M	60 M	$5.8 B	192
	HomeAway	1 M	65 M	$15 B	190
	LiQUIDSPACE	8.7 K	42 K	$10 M	4
On-Demand Workforce	Upwork	3 M	4 M	$1 B	180
	TaskRabbit	50 K	2 M	-	1

Fig. 2:
Selected companies active in the shared economy

joint use of real estate via technical platforms. Probably the best known flagships in the real estate sector are Airbnb and WeWork. The American Airbnb platform deals with the booking and rental of private accommodation and currently has over 4 million properties advertised across more than 190 countries (as of September 2017).[18] The WeWork platform, also from the USA, provides shared workspaces, a community feel and services for entrepreneurs, business founders, freelancers, startups and small businesses. WeWork is currently valued at around USD 20 billion and manages approximately 10 million square meters of office space.[19]

Yet the shared economy is not exclusive to the real estate sector. It is also strong in other areas such as transportation and the on-demand workforce. Since the turn of the millennium, the concept of the shared economy has met with increasing success. In the intervening years, the sector has produced ten unicorns (startups valued at USD 1 billion or more). These unicorns have decisively shaped their industries through innovations and business process transformation in recent years.[20] The best known companies in the transportation space are Uber, Lyft and Zipcar, while TaskRabbit and Upwork are among the biggest names facilitating the on-demand workforce, as illustrated in Fig. 2. A recently published study by Jones Lang LaSalle (JLL) spells out the strength of the shared economy trend in figures. And in 2016, 74% of respondents in a JLL poll identified "thinking, talking and brainstorming as creating the most value within an organization. For this reason, companies are implementing more and more alternative workplace solutions, e.g. cooperative working to increase collaboration within the company."[21]

However, returning to the shared economy in the real estate sector, it is easy to see why this segment, especially the P2P (peer to peer) part of it, is growing significantly and is extremely attractive to startups and other innovative companies. Real estate is a capital-intensive investment whose prices have risen considerably in recent years. Minimum equity ratios of 10–30% of the transaction value, including fees and taxes, may be customary but they are almost impossible to finance for millennials. This is not just a German problem. Although London has seen 30,000 new apartments built since 2008, real estate prices have risen by around 60%. The typical minimum equity contribution of 20% for an average house comes in at over GBP 100,000.[22]

The widening gap between rich and poor and the growing discrepancy between housing supply and demand in conurbations such as Germany's seven largest cities is forcing millennials and other social groups into shared housing. The shared economy platforms they are using to rent increasingly scarce housing are benefiting from the growing demand. For years, growth on the supply side has been significantly lower than on the demand side. This imbalance in supply and demand is what led to the founding of Airbnb in the autumn of 2008. Founders Brian Chesky and Joe Gebbia, both of whom were unable to find a job af-

ter graduating from Rhode Island School of Design during the financial crisis, put up three guests on airbeds in their home during a design conference to earn some extra money. Years later, Airbnb has over 4 million properties advertised online and has cost the hotel industry about USD 450 million in lost revenue.[23]

Finally, we must also mention the growing importance of the "third place" in the shared economy. Examples of third places are cafés, clubs, libraries and parks. The third place is clearly differentiated from the first place (home) and the second place (the workplace). Based on findings from the JLL study (2016)[24], an average employee spends 25% of their time in third places. Modern employers are keen to try to move employees from second places to third places in order to increase collaboration, stimulate knowledge sharing and enhance the overall employee experience. Above all, the ever-changing nature of modern work and the importance of creative and innovative ideas have led to the continuous growth of third places globally. Shared economy platforms such as WeWork benefit significantly from this global trend.[25] The German headquarters of PriceWaterhouseCoopers (PwC) is a first mover here, having developed an app that encourages employees to spend more time together in third places. The app, known as "clapp – creative lunch app", which is still being beta tested, motivates employees from different departments to have lunch together. Developed by the in-house innovation department called the Experience Center, the app aims to increase knowledge sharing between different teams within PwC and to break open corporate silos.[26]

Summary

Despite being generally slow to embrace change, the real estate industry can no longer shut itself off from fundamental technology innovations. Although individual areas such as the housing industry have so far been spared the effect of disruptive business models, companies such as Zillow, Airbnb and WeWork prove that the impact of such business models on the industry can be huge.

Different market players will face their own individual challenges. But to thrive in this environment the same basic principle applies to all: keep an eye on what's happening in the market and develop early strategies to implement the latest innovations in a structured manner within the organization.

1 University of Oxford (2017): PropTech 3.0: the future of real estate
2 Venn, John M.A. (1880): On the Diagrammatic and Mechanical Representation of Propositions and Reasonings
3 http://www.zillowgroup.com/about-zillow-group/ Retrieved September 20, 2017
4 ibid.
5 ibid.
6 ibid.
7 ibid.
8 Wachstum auf europäischen Wohnungsmärkten, Immobilien Zeitung, September 2017
9 https://www.cnbc.com/2016/09/23/amazon-climbs-into-list-of-top-five-largest-us-stocks-by-market-cap.html. Retrieved September 26, 2017, Source: Factset
10 University of Oxford (2017): PropTech 3.0: the future of real estate
11 Green Building Council (2015): The Business Case for Green Buildings
12 https://abc.xyz/investor/news/releases/2014/0113.html. Retrieved September 26, 2017
13 http://www.businessinsider.com/apple-home-app-wont-change-the-smart-home-market-2016-9?IR=T. Retrieved September 26, 2017
14 https://bbu.de/nachricht/42623. Retrieved September 29, 2017
15 University of Oxford (2017): PropTech 3.0: the future of real estate
16 https://sustainability.fb.com/clean-and-renewable-energy/. Retrieved September 26, 2017
17 University of Oxford (2017): PropTech 3.0: the future of real estat
18 Airbnb Fast Fact. Retrieved September 17, 2017
19 Hempel, Jessi (2017-09-06), https://www.wired.com/story/this-is-why-we-work-thinks-its-worth-20-billion/. Retrieved September 17, 2017
20 Tune, J.K. (2015): The Sharing Economy Has Created 17 Billion-Dollar Companies and 10 Unicorns
21 Jones Lang LaSalle (2016): A New Era of Co-working, http://jll.co.uk/united-kingdom/en-gb/research/339
22 University of Oxford (2017): PropTech 3.0: the future of real estate
23 Mahmoud, A. (2016): The Impact of AirBnb on the Hotel and Hospitality Industry
24 Jones Lang LaSalle (2016): A New Era of Co-working, http://jll.co.uk/united-kingdom/en-gb/research/339
25 Huet, E. (2016): WeWork Turns to New Business Model for India Expansion
26 PwC NextLevel and Experience Center Tour, Frankfurt am Main, September 28, 2017

Small-scale market: A large proportion of property management companies are small businesses with up to 5 employees and an annual revenue of less than EUR 50,000.

When Property Managers Seek Growth

Asset Deals as an Option for Successful Inorganic Growth in the Property Management Market

The low interest rate environment and the high values that the real estate sector has maintained in Germany in recent years, compared to other investment classes, serves to keep the demand for property assets high, not only among individuals but also among institutional investors both domestic and foreign. Consequently, despite an increase in construction activity, there is still a supply squeeze in Germany's big towns and cities.

Project developers, real estate companies and investors do not just build and purchase property, they also have a need for their properties to be managed to a high level, on both the commercial and the technical front, by a property management company. Increasing levels of professionalism are therefore required from existing property managers.

Approximately 23,000 companies operating in the property management business employ an average of five people including the owner.[1] Nearly 40% of the firms make less than 50,000 euros a year, in a sign of how fragmented the market is right now. More and more companies are endeavoring to grow by acquiring other firms (i.e. through inorganic growth) in a bid to strengthen their market position and in many cases also to expand their service portfolio.

But what is the best way to realize such an inorganic growth strategy? One option that can be considered besides acquiring a company through a share deal is the possibility of an asset deal. Unlike the best known type of M&A transaction, the share deal, where shares in a company are sold by the shareholders themselves, an asset deal involves selling all or some of the company's operating assets and contracts (referred to collectively as assets).

The option of acquiring a company through an asset deal in the property management business offers an opportunity for rapid growth, leading to synergies and improved economies of scale.

This article discusses asset deals as a growth option in the property management context.

Asset deals and share deals compared

Asset deals and share deals each involve different types of liability risk. In a share deal, the buyer is also acquiring the company's past liabilities, both real and potential, and therefore needs to conduct a thorough due diligence check prior to the acquisition in order to examine the target company's profitability and its risks. In an asset deal, the seller continues to be liable for company obligations.

An important aspect of an asset deal is the fact that contracts with both customers and staff can only be transferred to the buyer's company with the consent of the parties involved. By way of example, management agreements with customers can only be transferred to the buyer with the written consent of the customer.

One of the advantages of a share deal is the fact that all of the seller's contracts normally remain in place when the shares are acquired, giving the buyer a higher level of certainty regarding the transaction itself and future planning premises for the acquisition. The only exceptions are management contracts with a change-of-control clause enabling the customer to terminate the agreement in the event of a change of ownership.

An asset deal gives the buyer the chance to select out the assets they want to acquire and to restrict their purchase to those. In the property management business these will predominantly be the management agreements with individual customers. There are three different types of customer relationships – with people in owner-occupied apartments, people in rented apartments and people with individual ownership – each being approached in a different way, both within the due diligence and in the direct customer contact that happens during the transfer of the management agreements.

Aside from customer relationships, experienced personnel is also among the factors that create value for the buyer in an asset deal. Section 613a of the German Civil

Fig. 1:
Advantages and disadvantages of asset deals and share deals at a glance

Asset Deal

- \+ Greater flexibility for the buyer, in that they choose which assets and contracts they wish to acquire
- \+ No need to take on any past liabilities or legacy risks
- \+ Opportunity to renegotiate/simplify contracts in the course of the acquisition
- \+ More straightforward transaction structure and less extensive scope of due diligence
- – Less planning certainty, given that both customers and employees must agree to a transfer
- – Acquisition risk owing to dependency on the success of the takeover of customer agreements and staff contracts
- – Less attractive to the seller due to the higher tax on the purchase price achieved
- – More extensive purchase contract required because assets and contracts need to be separately defined and valued
- – More time required owing to more extensive communication and the need to get the necessary agreements

Code (BGB) stipulates that employees can object to their employment contract being transferred to the buyer within a month of being informed. This carries a certain level of acquisition risk for the buyer, given that the success of an asset deal can be dependent on the motivation of the workforce in the target company to a large extent. Sellers for their part are normally very keen to transfer to the new company not only their contracts but also the employees who work on them. It is therefore highly advisable to seek thorough legal advice from employment law experts prior to the transfer of contracts and staff.

With the various assets to be acquired in an asset deal being individually specified in the purchase agreement, the buyer can be assured of legal certainty[2] over each asset and all of the employment, contractual and legal relationships it brings with it. These can therefore be unequivocally distinguished from the parts of the company that are not being sold. Consequently, the purchase agreement is considerably longer and more detailed than that of a share deal.

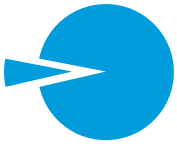
Section 20(2) of the German Condominium Act[3] stipulates that even if the residents' association does not consent to the takeover, they are still entitled to expect the terms of the management agreement to be honored even if the selling company only continues to exist legally as an empty shell, owning no assets and employing no staff. Faced with this situation, the only thing the seller can do is come to an agreement with the residents' association to terminate the management agreement as soon as possible and to continue providing services under the agreement until such time as it is effectively terminated. This risk for both buyer and seller is very difficult to foresee in the due diligence and contract negotiation stage.

Another important aspect when it comes to asset and share deals is the difference in the tax treatment of the two transaction types for the seller. A share deal is clearly more advantageous from a tax point of view for the selling party, and this is an important element in the company valuation and price setting stage of the process. It is advisable to seek legal advice from tax professionals prior to negotiations.

Comparing the two transaction types, a share deal is more advantageous for many companies, which is why it is the more common option in practice. An asset deal is still an interesting alternative, though, given that a share deal involves the buyer accepting the risk of potentially acquiring bad assets and possible future risks from past liabilities. Furthermore, in some cases an asset deal is the only possible option, such as when the property management business is just one of several business lines owned by the selling company.

Due diligence as an essential tool to support an asset deal

Due diligence is an indispensable part of checking what you are buying. The key element is the analysis of management agreements. Within the due diligence it is import-



Share Deal

+ Greater planning certainty, given that the seller's contracts can be taken over without the customers' and employees' consent
+ Streamlined purchase contract since none of the assets need to be determined in detail under the principle of legal certainty
+ Less tax on the purchase price achieved

– Acquisition risk owing to the assumption of liabilities and risks from the past
– Extensive due diligence to value the parts of the company that will be taken over
– Risk of taking on unprofitable contracts

ant to note that the management agreements are normally concluded for a limited period of time, which increases the pressure to successfully acquire and integrate the business. In Germany, the maximum length of time a property management company can be assigned a contract for an apartment complex under the German Condominium Act[4] is five years. In practice, agreement terms usually run for three to five years for owner-occupied apartments and for just one year in the case of rented apartments and individual ownership.

Besides considering the contract term, the due diligence should also examine the value of the management agreements, which can only be assessed after a detailed analysis of the various service components contained in the different customer agreements.

In addition to revenues and contractually agreed services, the variable and fixed costs that will be transferred over with the asset deal also need to be looked at in detail. The biggest cost block in the property management business is personnel costs (normally making up 50–75% of expenditure). The terms laid down in the work contracts and any subsequent changes and additions, including possible pension obligations, need to be analyzed and valued. In addition, the cost and the components of the business's other operating expenditure (e.g. rental costs for business premises and costs of the ERP system) should also be examined in the due diligence and valued taking into account any possible optimization potential. See Fig. 1 for an illustration of the business and contractual aspects that need to be considered and evaluated prior to an asset deal.

The outcome of the due diligence can be summarized in the form of a business plan based on the situation as is and including the planned business effects. The business plan is therefore a key element in calculating the right purchase price. Depending on the size and relevance of the asset deal, the plan may also depict several scenarios with different business trends. How meaningful and accurate the business plan is depends greatly on the preparations made by the buyer themselves in terms of the structure of the due diligence, combined with the quantity and quality of the data provided by the seller and the time available for the due diligence. The financing concept is the basis for laying down the underlying premises for financing the purchase price and specifying the precise payments to be made. There are various payment options that can be negotiated aside from a fixed payment at a fixed time. An earn-out model[5] (also known as a debtor warrant) is one common and popular form of payment. This involves making a fixed payment for part of the cost, followed by several phased installments paid according to the level of success achieved. The success-based installments are often defined by how well certain contractually agreed parameters are actually achieved. In the case of an asset deal in the property management industry, such parameters mainly include the proportion of management agreements actually transferred, the term of the various agreements and the size of the agreed management fees. While an earn-

Fig. 2:
What to bear in mind: indicative due diligence criteria for analyzing a property management business, by category

Due Diligence

Customers

Owner-occupied apartments

- Contract term between 1 and 5 years (reappointed at the owners' meeting)
- Management fee normally per unit by type of usage

Rented apartments and individual ownership

- Contract term about 1–2 years, depending on size of contract, automatic renewal every year if not cancelled
- Management fee normally per unit by type of usage or on the basis of present or future net rent (without utilities), or in certain cases as a flat rate

- VAT optimization of the properties managed
- Contractual provisions for termination without notice or special rights of termination (e.g. change-of-control clause)
- Contractually agreed service level and other agreements/ payments
- Contractually agreed commercial and technical services
- Contractual adjustments to agent's fees in accordance with 2nd Computation Ordinance

out model does enable the purchase price to be flexibly adapted to match the rate of success achieved in transferring over management agreements, it does not diminish the buyer's risk of potentially having to continue to fulfill long-term management agreements where tenants withhold their consent to a takeover.

Closing an asset deal in the property management business

Three significant dates are set during contract negotiations: the signing date, transfer date and closing date.

The signing date is the day on which the purchase agreement is signed and the terms of the transaction agreed in writing.

The closing date is the day on which all conditions precedent (laid down in the purchase contract) occur, in other words the date on which the purchase contract legally takes effect. The conditions precedent include payment of the agreed purchase price (or an installment thereof) plus consent from the responsible shareholder bodies and antitrust approvals, as required. Closing normally takes place on a banking day, given that this is the date on which payment passes from one party to the other.

The transfer date is the day on which the transfer takes place from an accounting and business point of view. The date is laid down in the purchase contract and is usually at the start of a year, quarter or month. This makes it easier to distinguish business responsibility for services and costs between the buyer and the seller. The transfer and closing date are normally quite close together.

The gap between signing and closing will depend on the size and complexity of the asset deal. It must provide sufficient time for the seller to carve the assets out of its business and for the buyer to make preparations for proper post merger integration (PMI). But closing should not be left too long, as it is in everybody's best interests to provide a level of certainty for the seller's customers and staff alike. The gap is normally about 2–6 months.

As the parties approach agreement in the contract negotiations for the asset deal, preparations should take place for making contact with customers and informing service providers so that the buyer can start talking to the seller's customers and staff as soon as the asset deal is signed. The need to obtain consent from several parties means that this will take longer and require more communication. Making thorough preparations in plenty of time helps prevent customers and employees from looking around for new service providers or employers for want of timely information.

Property management and the management of owner-occupied apartments in particular is very much a people-centered business. This means that information needs to be provided to employees sensitively and the takeover of staff from the seller's company must be done in a structured manner. Besides losing a wealth of specialist expertise and knowledge of property specifics if staff choose not to transfer to the buyer's company, it also makes it more

Personnel

- Number, skill level and age of employees
- Length of service and pension provision of employees
- Personnel costs and personnel cost ratio

Economics

- Annual financial statements and balance sheets for the past 3–5 years
- Additional income and revenues (technical support, special revenues)
- Checking of all key items of other operating expenditure, such as office rent, IT costs, leasing

difficult to convince customers of the benefits of allowing their agreement to be transferred. Being able to say "Nothing will change for you on a day-to-day basis" can work wonders in getting customers to consent.

Against this backdrop, there is a fundamental distinction to be made between taking over the property management agreements relating to rented apartments and those relating to owner-occupied apartments. In the absence of consent, agreements relating to rented apartments have relatively short notice periods of 1 year, and so they can be terminated relatively quickly by either the buyer or the owner on the grounds of business discontinuation. In the case of owner-occupied apartments, the takeover is subject to approval at a property owners' meeting with a quorum. If the annual owners' meeting has already been held prior to the announcement of the asset deal, a special meeting of the owners must be called and must have a quorum in order for consent to be agreed.

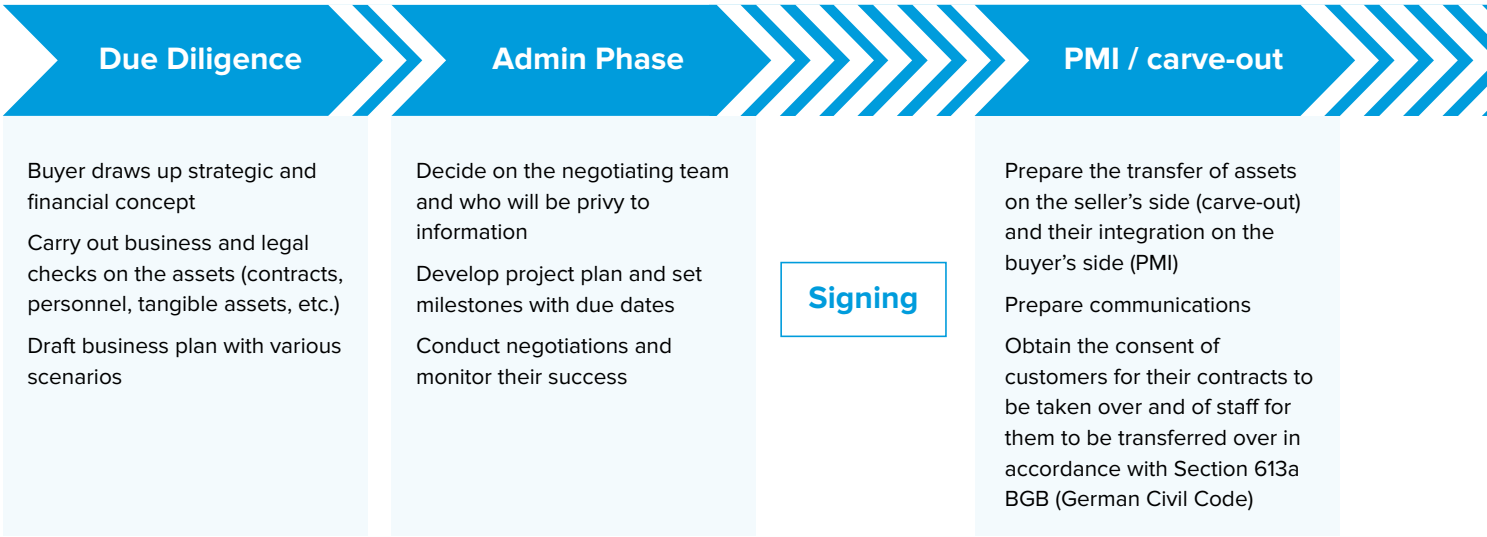
Once the customers have given their consent, it is in both cases possible to take over the existing agreement as is or to negotiate a new agreement with the customers whose business you are taking over. The latter is the more attractive option as it provides the opportunity to renegotiate the scope of services and the terms of the agreement or to align agreements with the buyer's other ones.

As soon as you determine which assets are going to be taken over you need to start planning the approvals you will need to obtain for the subsequent takeover itself. This stage is often referred to as post merger integration (PMI). The aim of PMI is to make the process of taking over the company's assets and contracts as smooth as possible, presupposing the agreement of customers or staff. PMI is mainly concerned with preparing, structuring and implementing the measures involved in taking over the assets, often supported by a temporary project organization. The implementation project extends beyond the actual closing date to manage the ongoing communications with customers and employees, realize the necessary changes in processes and organizational structures and potentially transfer everything into a new ERP system, as applicable.

Summary

The diverse and multi-layered nature of the property management market means that service providers are under growing pressure to put their own organizations on a more

Fig. 3:
Indicative procedure in an asset deal



effective and efficient footing and to differentiate themselves from other property management companies by offering an extended service portfolio. Inorganic growth creates new options here and can allow you to exploit economies of scale and additional synergies.

A good way of doing this is by acquiring assets through an asset deal. The key advantage over a share deal is that an asset deal gives the buyer greater flexibility in that they are able to choose precisely which assets and contracts they wish to purchase, and they do not have to take on any past liabilities or legacy risks. The main disadvantages over a share deal lie in the fact that customers need to give their consent and staff need to agree to a transfer, meaning that the buyer does not have quite so much planning security. And in negotiating the asset deal, the selling party needs to take into account the higher tax burden they will incur as a result of whatever purchase price they achieve.

On the basis of a due diligence check, the acquisition needs to be well planned and structured and have all the relevant due dates scheduled. It is also important to have the process managed and monitored by the right project team. The business plan is the most important tool to determine the best purchase price and to identify the opportunities and risks of the asset deal in advance.

The chances of successful realization are higher if the signing of the asset deal is quickly followed by contact with the customers, and if the employees who are transferring are actively involved from the outset.

1 Volks- und Raiffeisenbanken Branchenbrief: GK 117 Hausverwaltung (10/2016)
2 Section 854 ff. BGB Principle of Legal Certainty
3 Section 20(2) German Condominium Act
4 Section 26(1) German Condominium Act
5 van Kann, J. (2009): Praxishandbuch Unternehmenskauf: Leitfaden Mergers & Acquisitions. Stuttgart: Schäffer-Poeschel. 57 f.

Purchase price payment

Pay the agreed purchase price on time

If applicable, get the necessary official bodies to consent to the asset deal

Closing and transfer day

Implementation / realization

Project team members and/or coaches provide support

Handle communication, training on and implementation of the changes involved with the takeover, e.g.

- ERP system
- Processes
- Organisational structures

Homes for Homecare

How Housing Companies Can Create Value in the Homecare Market

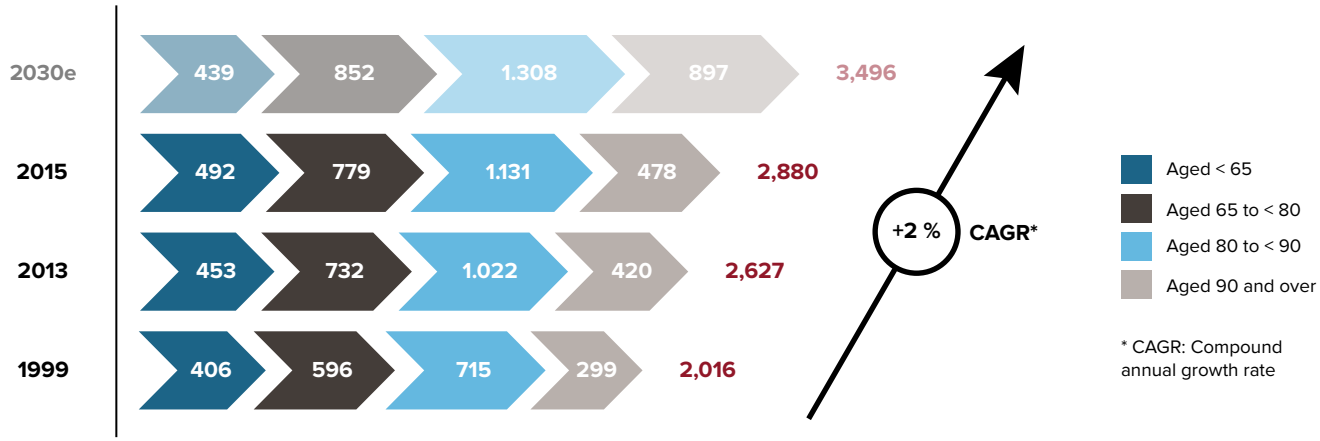


Fig. 1:
Our society is aging and in need of increasing levels of care. Development of care recipient numbers by age group

Residential real estate companies are subject to a diverse range of trends in a changing market. On the meta-level we have demographic change, bringing an aging and indeed shrinking society coupled with a rise in migration. Then there is rural depopulation and the general urbanization trend causing substantial growth in the scale of our cities. The top-heavy age pyramid present in our society today and the fact that old people want to stay living in their familiar surroundings for as long as they can are two factors that place our cities and housing companies under considerable strain. The challenge lies in providing sufficient living accommodation for the young who want to move to the city, and for the old who want to stay there. There is growing demand for alternative living concepts such as assisted living, senior living communities and multi-generational accommodation in which several generations live under one roof.

The homecare market

In 2015 there were some 2.9 million people in need of care[1] in Germany. These people were looked after and cared for either in institutions (27%) or in their own homes (73%). The market for homecare in Germany is served by three types of organizations and accounted for revenue volume of EUR 12.3 billion in 2015. The organizations involved are private companies, which make up 65% of the market, non-profit organizations (Caritas or Diakonie/church welfare) with 33% market share, and the public sector accounting for just 2% of the market. The number of care recipients is growing at a constant 2% p.a. And the proportion of people being cared for in their own home is set to rise disproportionately. Fig. 1 illustrates the trend in recent years and the predicted development of the different age groups in the period through 2030.

In Germany, the first, second and third act on strengthening long-term care (*PSG, Pflegestärkungsgesetz I, II, III*) and the rules laid down in the social security statutes, in this case social act five (*SGB V* – statutory health insurance) and social act eleven (*SGB XI* – long-term care insurance), form the legal framework within which homecare services are provided. There are five degrees of care (*Pflegegrade*): each care recipient is assigned one of them by their nursing care insurance fund. The degree of care determines which services a person can access and how much of the cost will be covered by the nursing care insurance fund. Any services beyond this scope must be paid for by the care recipient themselves.

Providing in-home care services is very time consuming and labor intensive for care providers. The demand for qualified care workers is high, with many regions unable to meet the demand, at least in part. Care providers endeavor to make themselves attractive employers by making the working conditions as pleasant as possible through means such as reducing driving time by optimizing carers' route plans. Much of the work carried out by carers involves activities for which qualified personnel is not required. This includes help around the home, which is often done by auxiliaries or sometimes by members of the family.

Many providers of homecare services are keen to build their own facilities for assisted living or are taking steps to purchase and repurpose existing buildings. However, they often lack the funding to do this given that banks apply very restrictive financing conditions to such concepts or, more to the point, to such borrowers. That is because homecare services are in many cases still provided by businesses in sole proprietorship rather than limited liability companies. Assisted living as a concept does not in itself fall under the provisions for special buildings in the building regulations,[2] nor is it classified as a care home under the national or regional care home acts. In-home assisted living means that care recipients live in their own homes (an apartment with bathroom and kitchen) where they are cared for by family members or care facility employees. Care recipients are

Without daytime care	
# units	100
m² living space per unit	62 m²
Total living space	**6,200 m²**
Net rent per m²	EUR 6.00
Time in months	12
Total net rent p.a.	**EUR 446.4 k**

Assumptions	
# tenants per unit	2
# tenants in total	200
# of care recipients	50
Area for daytime care per care recipient[1)]	18 m²
Total area for daytime care	900 m²
Net rent pe m²	EUR 10.00
Investments for alterations per m²	EUR 1,000.00

With daytime care	
Total living space – new	5,300 m²
Net rent per m²	EUR 6.00
∑ net rent from residents p.a.	**EUR 381.6 k**
Area for daytime care	900 m²
Net rent per m²	10,00 EUR
∑ net rent daytime care p.a.	EUR 108.0 k
∑ net rent in total p.a.	EUR 489.6 k
Additional revenues p.a. from option B	EUR 43.2 k
Return on investment	4.8%

Fig. 2:
Investments in refurbishing a building to provide daytime care can pay off: two versions of a property, one without and one with space for daytime care

entitled to care aids to facilitate their care. The federal government subsidizes what it calls measures to improve the living environment (e.g. accessible bathrooms) to the tune of EUR 4,000 per measure, per care recipient. Senior living communities can also access this subsidy of EUR 4,000 per measure, per care recipient, up to a maximum of EUR 16,000 per senior living community.[3]

Working for or in an assisted living community is very attractive for care providers and their employees. For one thing, the care provider has better control over their costs as a result, and for another, the employees benefit from minimal or no driving time.

Options for housing companies

Residential real estate companies can increase their revenues by developing concepts to match their specific situation and tenant structure. There are numerous options for how to maintain a high occupancy rate long term and meet the needs of older residents and people in need of care who want to stay living in their familiar neighborhood for as long as possible. Besides cooperating with care providers, it may also be possible for housing companies to set up their own care provider as a subsidiary or joint venture. The legal framework in Germany enables real estate companies to set up their own care facilities.

A first step toward approaching this subject would be to look for a suitable building and to create spaces in it which a care provider could use for daytime care services. This would mean creating a communal lounge (a place for residents to socialize), including bathroom and kitchen facilities and integrating fire protection measures. Fig. 2 illustrates the potential for a sample rental property of that kind.

This example assumes that part of the original residential space is turned into space for daytime care facilities. An area of around 18 m² per care recipient is assumed in the calculations here. There is no statutory minimum but this figure is currently taken as the basis for new build projects of this kind.[4] The residential real estate company can lease the 900 m² of space allocated for daytime care provision to a care provider (cooperation partner) at a higher net rent of EUR 10 per m² per month. This gives the real estate company an extra EUR 4 per m² per month in revenues compared to the usual net rent for residential units (EUR 6 per m² per month). On a yearly basis that amounts to an extra EUR 43,200 in revenues. This is offset by investment costs of around EUR 900,000, or EUR 1,000 per m². This results in an investment return of 4.8%,[5] illustrating the potential that can be achieved by repurposing just 15% of the residential space (900 m²).

As mentioned above, care providers are very interested in creating their own assisted living facilities. The next example (see Fig. 3) shows the rental potential that a new build project for pure assisted living can have for a real estate company.

The demand for accommodation in assisted living facilities has seen a rapid rise in recent years and is expected to increase further. Popular apartment sizes are 34–42 m²

Potential for rental revenues from assisted living

	Rental units	Rentable area	Rent per m²	Rent pcm	Rent p.a.
ASSISTED LIVING	50 one-room apartments (37 m² each)	1,850 m²	EUR 8.50	EUR 15,725	EUR 188,700
	50 two-room apartments (49 m² each)	2,450 m²	EUR 8.50	EUR 20,825	EUR 249,900
	Daytime care (18 m² per resident)	2,700 m²	EUR 10.00	EUR 27,000	EUR 324,000
	Total	**7,000 m²**		**EUR 63,550**	**EUR 762,600**
TRADITIONAL APARTMENTS	**7,000 m² equates to approx. 113 residential units averaging 62 m² each**	**7,000 m²**	**EUR 6.00**	**EUR 42,000**	**EUR 504,000**

Fig. 3:
New build project for assisted living accommodation vs. traditional apartments

for one-room apartments and approximately 49m² for two-room apartments. Real-life examples show that higher net rents (from EUR 2.50 per m² as in this example) can be achieved with assisted living facilities. If we include the income from the area used for the daytime care services, rental income comes out more than 50% higher than it would be for the same rentable area. Construction costs for the two variants are almost identical, given that this kind of assisted living facility is not subject to any special building regulations. The additional costs of installing extra fire protection measures in assisted living facilities are quickly recouped from the additional income generated.

These are two examples of cooperation, whereby a residential real estate company makes space or an entire building available and rents out a facility for use by a homecare provider.

In combination with the options listed above, real estate companies also have the option of establishing or acquiring their own homecare provider. On the one hand, this enables synergies to be realized between the companies in areas such as finance and accounting or IT. And on the other hand, homecare providers generate a proven EBT margin of 5–20%. An expert interview conducted by RITTERWALD in March 2017 found that as a rule of thumb, once a homecare business is fully up and running, 70–80% of revenues go on personnel costs and approximately 10–15% go on all other costs of materials. Which means that, if appropriately integrated into the residential real estate company's corporate structure, a homecare service can make good business sense as a complement to the company's residential real estate activities.

Summary

This outline illustrates how housing companies can meet the wishes of their tenants who want to stay living in their familiar environment in their old age. Depending on their portfolio and their tenant structure, or when undertaking new builds, real estate companies should consider the potential value that could be added from alternative rental properties through the creation of space for daytime care services or assisted living facilities. In the context of strategic neighborhood development with further synergies in mind, residential landlords could even go so far as to consider founding their own homecare provider as a subsidiary company. A sensible combination of the options described above holds out the best prospect of commercial success for real estate companies.

1 Social act eleven of the social security statutes (*SGB XI*) defines the need for long-term care. Sections 14 and 15 contain the precise provisions defining when a person is considered "in need of care". This determines the person's entitlement to care services. Social act eleven of the social security statutes (*SGB XI*) defines the need for long-term care. Sections 14 and 15 contain the precise provisions defining when a person is considered "in need of care". This determines the person's entitlement to care services.
2 Please note that state legislation is authoritative and that it is important to check on a case-by-case basis which other regulations also apply.
3 See Section 40 of the social security statutes (*SGB XI*).
4 See journal "Häusliche Pflege" 01/2017.
5 Please note that this is a periodic ROI, resulting in a payback period of about 21 years for the investment.

Good Ideas for Bad Debts

Delinquent Tenant Receivables in the Housing Sector Offer Frequently Overlooked Revenue Potential

Large real estate companies are always having to deal with tenants in arrears. Despite internal dunning and eviction procedures they still have to write down millions in unpaid rent and utility charges every year. But delinquent, written down receivables are not fundamentally worthless – in fact they offer long-term revenue potential in many cases. Once they are legally enforceable claims (i.e. have been declared as legitimate receivables in a court of law), the statutory limitation period extends to 30 years.

Housing companies have various options they can take when deciding which strategic position to adopt on receivables management: they could choose not to pursue delinquent receivables from debtors from whom payment could not be elicited even after legal proceedings (e.g. personal bankruptcy). Or they could engage debt collectors to collect the receivables. Alternatively, they could make up "packages" of written down receivables and sell them off (in a procedure known as factoring). This can be done on a rolling basis (e.g. all receivables falling due on a monthly or quarterly basis) or they can be put into one large package and sold to clear bad debts.

The option of engaging a conventional debt collection agency cannot be recommended unreservedly from a business perspective for a residential real estate company. Total receivables from each (former) tenant usually amount to several thousand euros. Particularly when you have tenants who have been through dunning procedures, forced evictions and court cases, the tenants can often be on the verge of personal bankruptcy. They may have moved away without leaving a forwarding address as a result, or they may only be able to pay off the debt in very small installments (e.g. 10–20 euros a month). The prospects of the total claim being paid back in the short to medium term are consequently very limited. Not only that,

Factoring

Sale of written down rental receivables from housing companies

+ Immediate, significant liquidity inflow
+ One less job for accounts receivable/dunning team to do
+ Buyer assumes all further collection risk
+ Clears bad debts and has a positive impact on the bottom line

– Receivables are sold at a discount (87–98% of the original total receivables being paid)

Debt collectors

engaged by housing companies

+ Reduces payment default
+ Regular, small liquidity inflows
+ One less job for accounts receivable/dunning team to do
+ Collection costs paid by debtor if debt successfully collected

– Collection costs may need to be paid by real estate company if debt cannot be collected
– Bad debts that cannot be recovered over a long period incur court/inventory costs
– Possible negative image transfer from the poor image of debt collection in general
– 30–60% success fee payable to debt collector

Fig. 1:
Weighing up the advantages and disadvantages of factoring vs. debt collection from a residential real estate company's perspective

but the real estate company may suffer damage to its image as a result of being connected with debt collectors. Instead of pursuing the unpromising cases internally or with a local collection agency for moderate success, factoring offers a better option.

Factoring as an alternative to debt collection

Factoring involves a company (continually) selling its receivables to a specialist service provider. Member companies of the German Factoring Association saw their combined revenues exceed EUR 200 billion for the first time in 2015. Although it must be said that the vast majority of factoring revenues have nothing to do with delinquent receivables that have been through the dunning process.

Normally, the company selling the receivables (e.g. a trading company, manufacturing firm or service provider) signs its receivables over to a factoring company as soon as the respective invoices have been raised. The factoring company then pays the seller 80–90% of the total receivables immediately and subsequently takes care of the incoming invoice payments itself – including accepting the risk that the debt may be defaulted on (collection risk).

So as we can see, regular factoring does not represent a compelling option for a housing company – after all, it's clear that landlords don't need external help with monitoring their incoming rental payments. However, the factoring market is very diverse and some providers have specialized in the niche market of buying distressed receivables. And among them, certain experts are specifically targeting real estate and utility companies.

Large packages of rental receivables are in high demand among factoring firms

Germany's healthy economy means that payment practices are generally better than average and the demand for receivables portfolios exceeds supply. The low interest rate environment means that many of the big factoring firms can refinance their debt at low cost and are willing to pay attractive prices to real estate companies selling off their receivables in auctions or tendering procedures.

Added value with RITTERWALD

RITTERWALD has excellent knowledge of relevant market players and service companies and supported one of Germany's leading municipal housing companies in selling their written down tenant receivables (EUR 15 million in total receivables from 5,200 debtors) in a structured bidding process. Of the 27 market players identified, 11 were contacted and competitive negotiations were entered into with three bidders. Ultimately, the receivables were successfully offered to the best bidder – a professional and reputable factoring company – without attracting any public attention. The attractive price paid for the portfolio of written down receivables improved our client's bottom line in the form of a one-time effect.

By 2030, about 6% of vehicles are expected to be electric.

Electric Mobility in Your Neighborhood

E-Mobility is Growing Rapidly and Gaining Relevance for the Housing Industry

The number of electric vehicles on the roads is still fairly low, falling far short of the German government's targets for 2020. Nevertheless, there has been extraordinary growth in the uptake of e-mobility products.[1]

Based on the given forecast and looking at the example of a housing company with 30,000 households, the tenants would own almost 2,000 electric vehicles in the year 2030. This, coupled with the fact that the bulk of vehicle charging takes place at home,[2] makes e-mobility a topic of increasing relevance for the housing industry. This kind of sector coupling between energy, mobility and housing is still not very well implemented and requires a large degree of coordination between the different players in order to be successful. Concrete results from research and practical application are still quite thin on the ground, which is why most of the projects implemented to date are pioneering.

There are numerous reasons why housing companies should address the subject of mobility. For one thing, quality of living in the apartments will be improved by the presence of adapted local mobility offers. And for another, increased property values can be achieved, as the expansion of mobility offers leads to better transport connections. Indeed, a housing company is in a good position to enter the mobility segment. That's because the housing company knows their tenant clientele, can assess their mobility needs, and a large portion of a person's mobility need is naturally linked directly to their place of residence – most journeys start or end at home, after all.

Technical and legal framework

The higher the charging capacity and the more charging points you make available on site, the higher the potential peak load will be. Since this can have a decisive influence on the overall capacity that needs to be provided and thus on the level of grid charges payable for a given neighborhood, there are a number of load management solutions already on the market. The aim of these is to cap any spontaneous load peaks by more evenly distributing the power that is being drawn over time. Such concepts are particularly interesting for fleet solutions when it does not matter which vehicle is used next, but applications on an individual basis are also conceivable. If the increased demand for power cannot be balanced out by load management, the building's mains connection will need to be upgraded, a very cost-intensive undertaking.

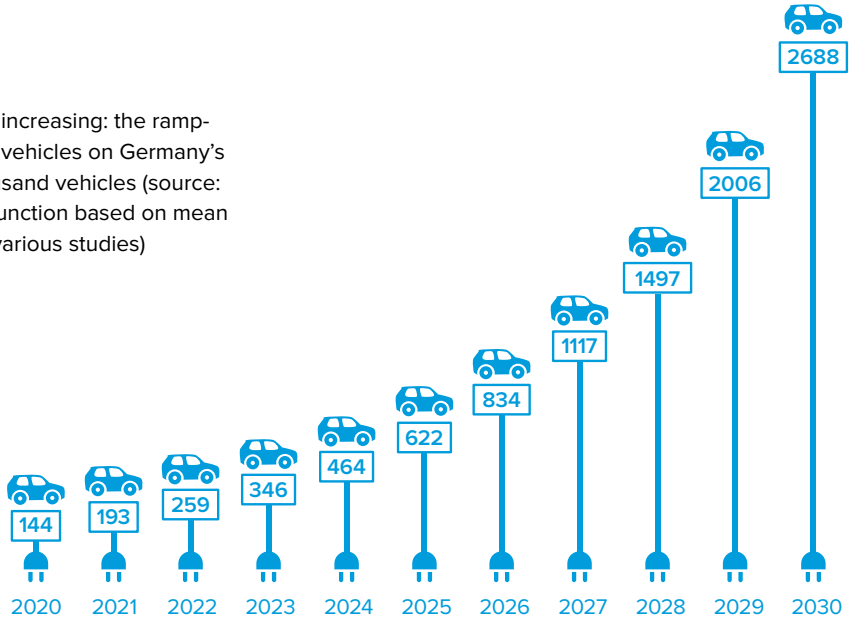
When it comes to billing, there are two things to keep in mind. In every scenario where there can be more than a single specified customer using a given charging point, the customer or vehicle using the electricity must be identified. In addition, the complete process of payment and billing must be covered. From 2021 onwards, smart meters will also have to be installed.[3]

Business models

In the housing industry context, it is essential to choose a business model that can be realized with the amount of parking space actually present on the site. In other words, both the number of available parking spaces is limited and the location of these parking spaces is already predefined. The two most important criteria for categorizing business models are the number of parking spaces that will be fitted with charging points and who will be able to use these charging points.

1. On the assumption that residents own (or will own) electric vehicles and charge their vehicles primarily overnight, it can make sense to equip private parking spaces with wallbox chargers providing up to 3.7kW of power. This low charging capacity is often sufficient for a privately owned car – fully recharging the vehicle's battery within the typical amount of downtime such a vehicle has.[4] The advantages of this concept are that there is no need to set any rules for the use of shared charging points (e.g. "parking

Fig. 1:
Numbers are increasing: the ramp-up of electric vehicles on Germany's roads, in thousand vehicles (source: exponential function based on mean figures from various studies)



space must be vacated when charging is complete"). In addition, it makes billing easier, since each wallbox charger is assigned to a certain tenant and billing can take place through the tenant's electricity bill. Finally, it can also be assumed that peak loads will tend to be low due to the charger's low power rating. The disadvantages are that connection costs will be high due to the sheer number of wallbox chargers required and, at least in the next few years, the utilization and thus the economic efficiency of the chargers will be low. According to the ramp-up curve of demand, as illustrated above, approx. 6% of the cars on German roads in 2030 will be electric vehicles.

2. Offering a car sharing option is one way of making it easier to estimate the amount of electricity that will actually be consumed. Under this option, a small number of parking spaces are supplied with charging points. These charging points are not publicly accessible but supply vehicles docked at these locations and owned by a car sharing provider. Cooperating with a car sharing company that provides the vehicles and bills customers for the individual trips they take also keeps the total expenditure for the housing company low.

3. Another model is to install a small number of charging points that all tenants (and possibly also non-residents) can use. The parking spaces in which the charging stations are installed are therefore not private but available for use by everyone. A higher power rating is required for such public charging points, as each will have to charge several vehicles per day. The advantage of this model lies in the higher level of utilization that will most probably be achieved by each charger, and also in the fact that it does not matter which tenants own or do not own an electric vehicle because charging points aren't allocated to personal parking spaces.

Summary

By 2030, about 6% of vehicles on the roads are expected to be electric. Housing companies will need to deal with this issue sooner rather than later, as the mains connections to residential buildings will need to be upgraded before too long. The business model involving charging points for mainly night-time charging is particularly relevant. This is a market that is evolving fast and dynamically. To be in a position to cope with the future growth in electric vehicles, it makes good business sense to start now, gathering experience with installing charging infrastructure and examining the impact it has on building connections or customers' systems.

First standardizations have already been implemented, with the result that some uncertainties have been resolved. However, experience over a longer period of time is still lacking, meaning that no best practices are yet available.

1 KBA (2018)
2 Wietschel (2018)
3 Klebsch (August 31, 2017), p. 78
4 Many suppliers on the market already offer wallbox chargers at comparable prices with up to 22kW charging capacity.

Not far to travel: electricity is generated locally and delivered directly to end consumers on site. Any surplus electricity generated is fed into the grid.

Buy My Energy!

Direct Sales of Decentrally Generated Electricity with the Direct Electricity Supply Concept

What exactly is the direct electricity supply concept? Known in Germany as *Mieterstrom*, the concept involves electricity being generated locally and delivered straight to end users in the neighborhood. Any electricity that is surplus to local needs is fed into the grid and corresponding payment is received; any extra electricity required is drawn from the grid. The advantage over feeding all of the locally generated electricity into the grid lies in the fact that it does not need to be transmitted through a grid or network (apart from the one inside the building), which means that the electricity price can be lower because various taxes, levies and charges are no longer incurred. These are, specifically, the concession fee, electricity tax, grid usage fees, CHP surcharge, interruptible load levy, Section 19(2) of the Electricity Network Charges Ordinance (*Strom-NEV*) and the offshore liability levy.[1] These elements make up an average of 41% of the domestic electricity price, though there are significant regional differences.[2]

Even before the law on direct electricity supply came into force in July 2017, electricity was already being sold through direct supply. However, as "direct supply" is not a protected term, it has been interpreted in different ways. As a result, many direct electricity supply projects have been implemented with photovoltaics (PV) only, or with combined heat and power (CHP) units, or even as a combination of both.

Parameters and implementation

Projects of that kind can still be implemented since the law came into force, but it is now possible to have a building's direct electricity supply subsidized by the state under certain circumstances. Subsidies depend on the size of the power-generating system and amount to 1.71–3.30 cents/kWh as of December 2017.[3] However, this subsidy for decentralized electricity generation is subject to certain conditions: only PV systems are subsidized (i.e. no CHPs), and only up to a power output of 100 kWp. The electricity may not be fed through other grids and the system must meet the definition of a customer installation according to Section 3 No. 24a of the Energy Economy Law (*EnWG*). The facility within which the direct electricity supply is sold must be at least 40% living quarters, which means that buildings used purely for commercial purposes are not covered. Each individual consumer must still be free to choose their electricity supplier without discrimination in order for the subsidy to be approved. The maximum term of any contract for direct electricity supply is one year. Furthermore, the price for the subsidized direct electricity supply is capped at 90% of the local standard tariff. Last but not least, the legislator has limited the total number of subsidized projects to a maximum output of 500 MW per year, but it does not currently look like this limit will be reached in the foreseeable future.[4]

The price cap of 10% below the standard tariff appears easy to realize given the above-mentioned levies that do not need to be charged. However, there are some risks involved in implementing a direct supply project. The first is the fact that the requirement for the consumer to be able to choose their supplier without discrimination means that the project developer cannot be certain how many tenants will actually sign up for direct electricity supply, in other words cannot be sure what penetration rate they will achieve. Since selling electricity direct to tenants brings in more money than feeding it into the grid, the penetration rate is an indicator of great relevance for overall project profitability.[5] Particularly when the project is being installed in an existing building (i.e. not a new build), it may be difficult to achieve a high enough penetration rate. That's because of the high acquisition costs per customer, which must be covered by the electricity price. In addition, there are high billing costs.[6] Closely connected to billing is the question of meter management within the system. When electricity is purchased in the standard way, the grid operator is responsible for providing and reading the electricity meter.

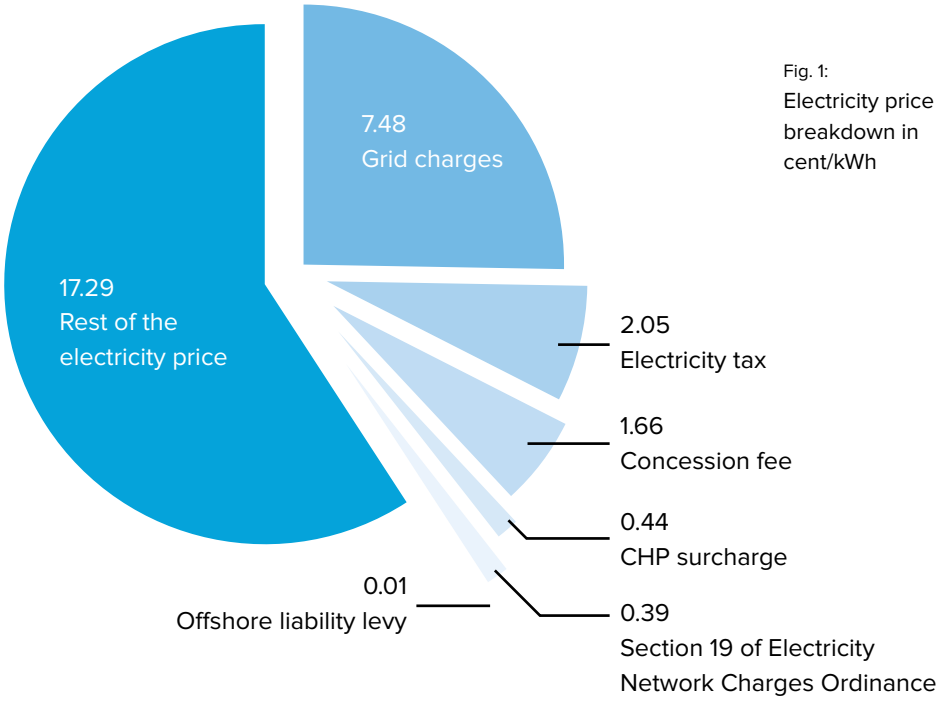


Fig. 1:
Electricity price breakdown in cent/kWh

Within a customer installation this responsibility falls to the operator.

Roles in project implementation

Apartments eligible for a direct electricity supply project are usually owned by a cooperative or a housing association. One possibility is for this company to handle all of the tasks itself. Normally they will need to build up the right expertise to do this, but on the other hand all of the profits will stay in-house. There is one big obstacle to this model, however: companies in the housing industry often take advantage of an extended reduction in trade tax. But the sale of electricity is considered a "harmful activity" in this context, which means that these tax concessions no longer apply – not only to the sale of electricity but to the company's entire revenue (in the case of cooperatives, only above a certain percentage of revenue received from the sale of electricity). This means that it only makes sense to implement a direct electricity supply project for companies that no longer benefit from this tax break.

That said, this problem can be avoided if the housing company does not act as the company selling the electricity. It can either outsource this activity to a subcompany or collaborate with a contractor.

Profitability

As the large number of influencing factors already suggests, the profitability of direct electricity supply projects is highly dependent on individual circumstances. An expected project return is 5–7% (4% if all of the electricity is fed into the grid).[7] However, this is very much project dependent, meaning that direct electricity supply projects are not worth implementing in many cases, which is also reflected in practice.[8] [9] One of the biggest influencing factors is the regional level of grid fees and thus also the concession fee, which is a percentage thereof. These two items alone result in around 8 cents/kWh in indirect subsidization owing to the fact that these fees are not payable. In addition, larger projects are often more profitable, which can make the combination of the 90% rule with the 100 kWp limit problematic.

Summary

The study examines which factors affect the profitability of direct electricity supply projects, which is highly dependent on individual circumstances. The influencing factors examined are installed PV capacity, size of interim storage facilities, penetration rate and roles in the implementation of the project. Ideally, tenants should be able to purchase low-cost renewable electricity generated on their own rooftops and thus contribute to the energy transition.

The funding restrictions are still extensive and particularly restrict the implementation of more profitable (i.e. larger) projects. There are also a number of uncertainties associated with the organizational aspects of such a project. Within the first year of direct electricity supply being subsidized, the number of applications is still limited – confirmation that the obstacles mentioned are a concern. Tax implications for housing companies continue to ensure that implementation does not add value for a significant proportion of owners of buildings that may have the potential for direct electricity supply projects. A quick check can help to identify the key issues for your company and to find ideal locations for direct electricity supply projects in your portfolio.

1 Ahlers/Kaspers (2017), p. 173
2 BDEW (January 9, 2018), p. 7
3 BNetzA (2017), p. 6
4 BNetzA (2018)
5 Hanusch/Hümpfner (2017)
6 Sagmeister (2017)
7 BMWi (n.d.), p. 4
8 BH&W and others (2017), p. 94
9 Konstantin (2009), p. 184

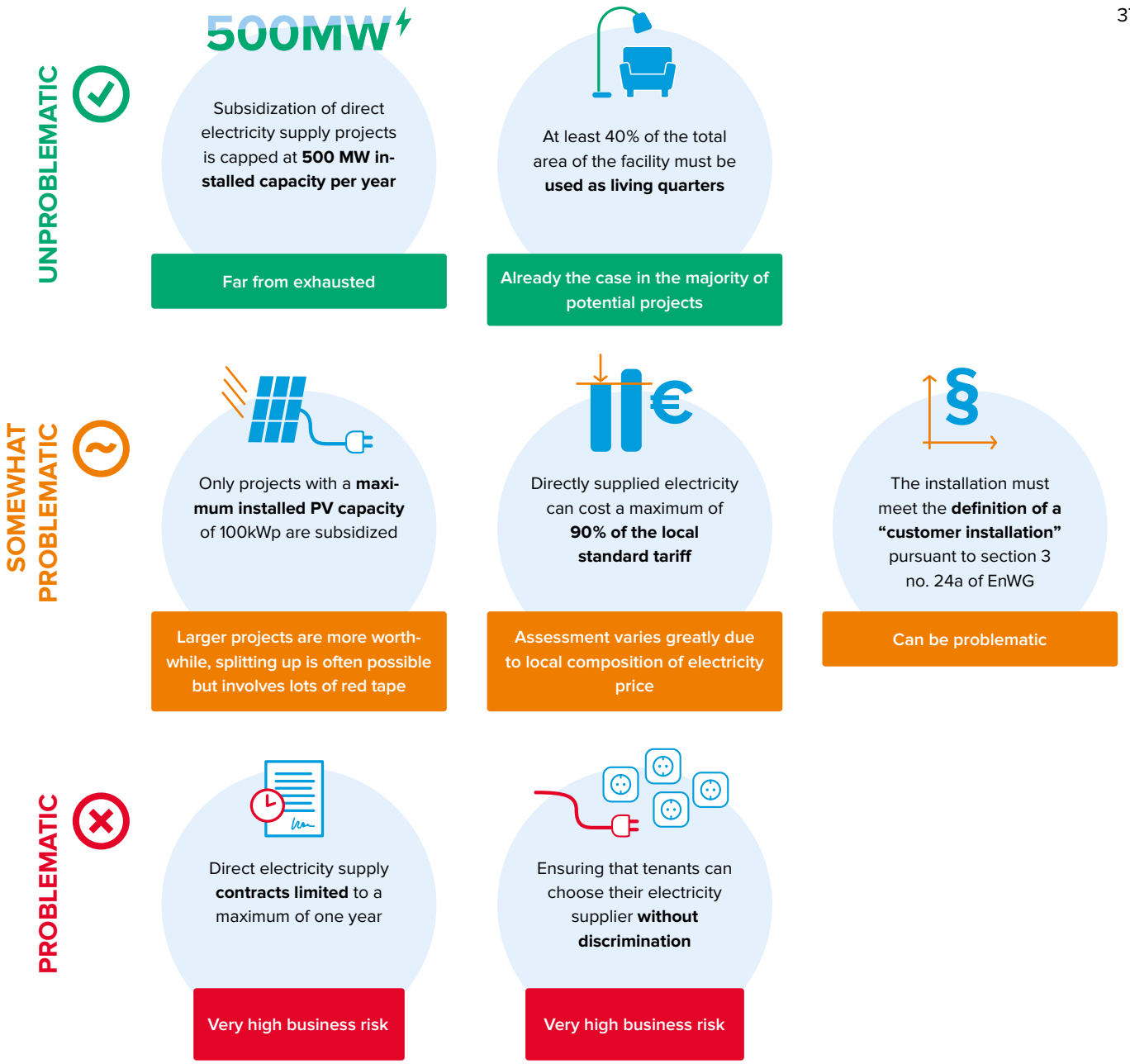


Fig. 2:
Evaluation of the requirements arising from the law on direct electricity supply

Literature

Ahlers, Malaika/Kaspers, Juliane (2017): Mieterstrommodelle - Wie können die Mieter aktiv an der Energiewende teilnehmen?, in: Zeitschrift für Neues Energierecht, 21st year, no. 3, p. 173–178.

BDEW (January 9, 2018): BDEW-Strompreisanalyse Januar 2018. Haushalte und Industrie, Berlin, Germany, URL: https://www.bdew. de/media/documents/180109_BDEW_ Strompreisanalyse_Januar_2018.pdf, retrieved: May 14, 2018.

BH&W/Prognos/on behalf of the BMWi (2017): Schlussbericht Mieterstrom, Berlin, Germany, URL: https://www.bmwi.de/Redaktion/ DE/Publikationen/Studien/schlussbericht-mieterstrom.html, retrieved: May 4, 2018.

BNetzA (2017): Hinweis zum Mieterstromzuschlag als eine Sonderform der EEG-Förderung, Bonn, Germany, URL: https://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/ Energie/Unternehmen_Institutionen/ErneuerbareEnergien/Mieterstrom/Hinweis_ Mieterstrom.pdf;jsessionid=BB0E14F76B- 29C57D-6302265638 90BC68?__blob=- publicationFile&v=3, retrieved: April 27, 2018.

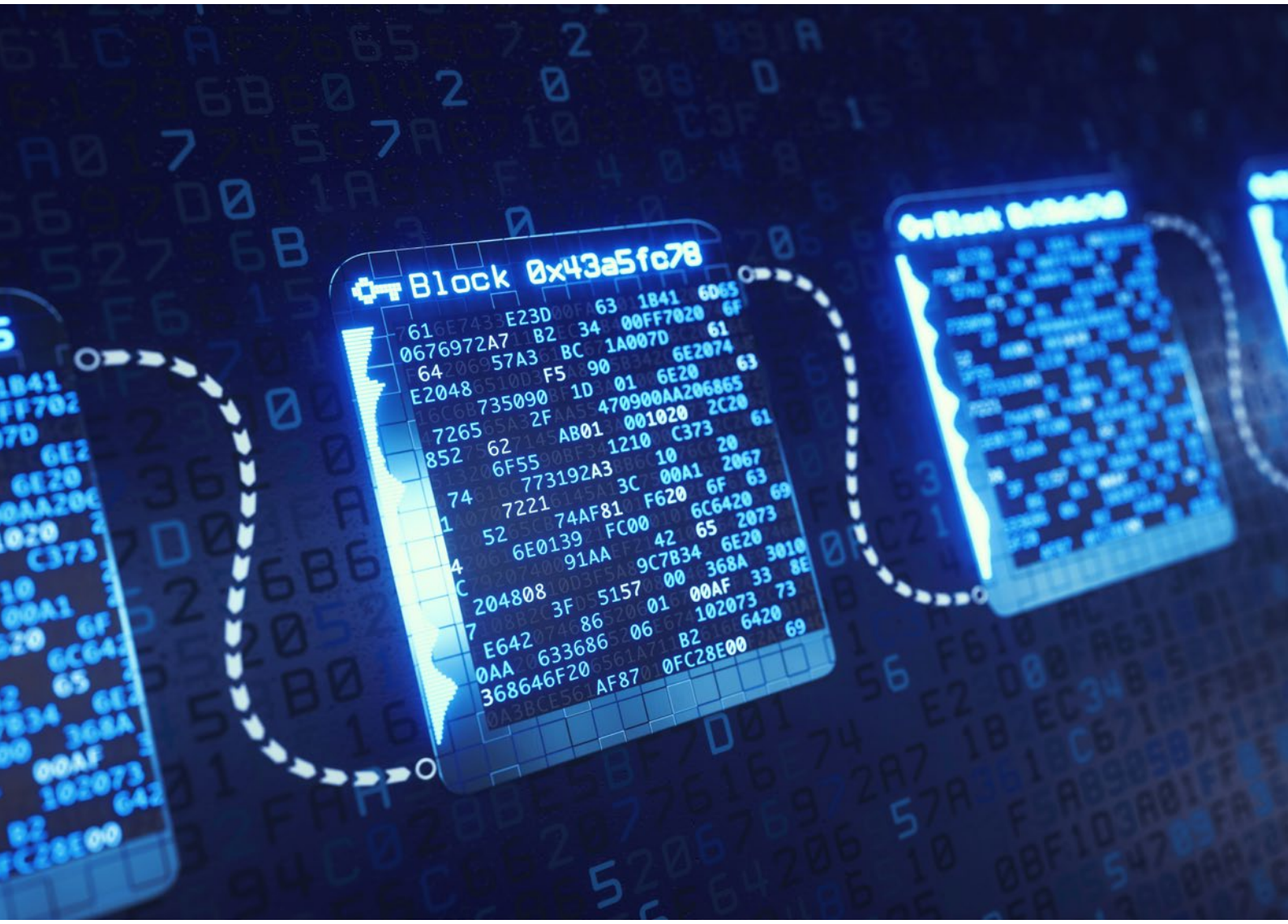
BNetzA (2018): Veröffentlichung der PV-Mieterstrom-Meldezahlen - Juli 2017 bis März 2018, URL: https://www.bundesnetzagentur.de/DE/Sachgebiete/ ElektrizitaetundGas/Unternehmen_Institutionen/ErneuerbareEnergien/ZahlenDatenInformationen/EEG_Registerdaten/ EEG_Registerdaten_node.html#doc- 732052bodyText5, retrieved: May 11, 2018.

BMWi (n.d.): Eckpunktepapier Mieterstrom, URL: https://www.bmwi.de/Redaktion/DE/ Downloads/E/eckpunkte-mieterstrom. pdf?__blob=publicationFile&v=8, retrieved: April 3, 2018.

Hanusch, Johannes/Hümpfner, Martin (2017): Energetische Quartiersentwicklung im Kontext des Smart City Ansatzes, URL: http://www.ritterwald.de/download/pdf/RW_20170123_Energetische_Quartiersentwicklung_www.pdf, retrieved: May 14, 2018.

Konstantin, Panos (2009): Praxisbuch Energiewirtschaft. Energieumwandlung, -transport und -beschaffung im liberalisierten Markt, 2nd edition, Berlin.

Sagmeister, Stefan (2017): Fragliche Verheißung Mieterstrom, in: Energie & Management, no. 14, p. 2.


Block 0x43a5fc78


Block 0x43a5fc78

The Chain of the Future

Blockchain – What It Is and How It Can Be Used in the Real Estate Sector

Blockchain has been the subject of intense debate for several years now. Judging by what one hears at many conferences, blockchain is rumored to have almost magical potential for disruption. Some have even gone so far as to say "Get ready to rewrite everything".[1] Others believe that the hype around blockchain technology is overinflated.[2] We explain in simple terms what blockchain is and discuss its significance for the real estate industry.

Blockchain made easy

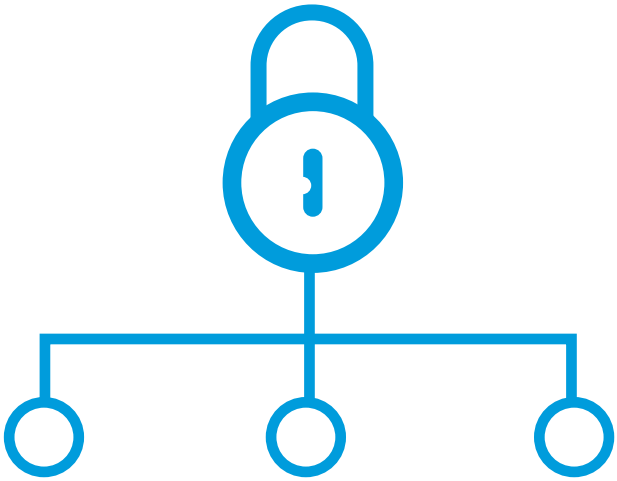
Many different definitions of blockchain can be found in the trade press and on the internet. Yet it can still be difficult for the non-technical among us to understand how blockchain works. That is because most definitions consist of numerous technical terms strung together and require a certain level of technical knowledge. So let's start with the basics. Here is an explanation of blockchain for business managers: blockchain is the name for a technical database concept which involves storing data that cannot be changed or deleted once it has been verified. Within this database, datasets are attached together in blocks. Subsequent datasets constitute new blocks and are attached to existing blocks. This creates a sequential chain of data blocks.

While this is still a fairly technical definition of blockchain, it becomes easier to visualize if you look at it like an Excel file. Imagine the Excel file as a database. The database consists initially of one worksheet (block 1). The first row in the worksheet is reserved (more on that in a moment). The second row contains a dataset (dataset 1). Another dataset is added in the next row (dataset 2). This is repeated several times until the block has reached a predefined storage limit. In the last row a so-called hash value is generated out of all the datasets. This is a checksum of all of the information stored in the block and is calculated using an algorithm. In each additional worksheet (block 2, block 3, etc.) the hash value from the previous worksheet is entered in the first (reserved) row and included in the calculation of the new hash value.

At this point you can perhaps already see the reason for all the excitement around blockchain. It's the linking of all the blocks into a chain with a hash value that creates a manipulation-proof database. And it's easy to see why: if the content of any of the blocks (or any of the rows in our Excel table example) is manipulated, then the hash value of the block will change and the reference figure linking the manipulated block with the next block will no longer match. So the hash value is a proof of integrity that can be permanently validated, thus guaranteeing the integrity of the data. Of course the question is, who is in charge of validating the data? That depends on the type of blockchain being used, in other words what particular attributes the database is meant to fulfill. In a public blockchain anyone can view and validate the data. In our Excel list analogy, this would mean that the database would be distributed between various different computers, so that anyone, anywhere in the world, could see the entries in all cells at any time and check whether their hash values matched. Thus, the public at large would fulfill the control function, as intermediaries have done to date with their databases stored on central servers.

Since a public database is not desirable or appropriate for all scenarios, there are also so-called consortium blockchains and private blockchains. In these cases the access to data is restricted to a certain number of participants (within a consortium or within a company) and only selected members can validate datasets.[3]

So as you can see, there is no such thing as "the" blockchain. What blockchain is, in fact, is a way of processing and storing data. For every different application, you therefore need to check in advance whether blockchain makes sense in your particular scenario and which type of blockchain is the right one for you.



Blockchain vs. Bitcoin

No doubt you'll have heard of the cryptocurrency called Bitcoin. Bitcoin is the best known use case for blockchain technology, but it is by no means the only one. Bitcoin is often wrongly considered synonymous with blockchain. In fact, Bitcoin as a cryptocurrency builds on a special type of blockchain without which it could not function. It is helpful to take a look at the Bitcoin blockchain to understand the benefits and potential uses of blockchain. Bitcoin is a network consisting of a virtual payment system and a virtual monetary unit. Unlike conventional currencies, transactions within a Bitcoin network are processed without intermediaries (such as banks). Everything is done peer-to-peer instead.[4] This is possible because the trust function fulfilled by the intermediary is replaced by the collective, as the collective validates the transactions. In fact, the transactions are validated by so-called miners. In the Bitcoin network, any participant can act as a miner and be involved in validating the transactions. There is a financial incentive to do so, in that only the first miner to correctly validate the transaction receives a payment in the form of Bitcoins.

The disruptive nature of blockchain technology consists in the fact that it cuts out all intermediaries. For the first time it is possible for a technology as opposed to a legal entity to generate the trust necessary for the exchange of items of value. Cutting out the intermediary in this way facilitates the transformation from an internet of data to an internet of values. And because the blocks (Excel worksheets) can record the transfer of any conceivable form of value, it is not only financial intermediaries like banks but all intermediaries of any kind that can be cut out by the blockchain technology.

Use cases

There are many different potential uses for blockchain. The main industry that is currently testing blockchain technology is the **financial sector**, where the potential efficiency gains are greatest. Banks spend 65–80 billion dollars every year on clearing and settlement. All this money could be saved in the future.[5] The technology also enables smart payment methods for objects such as refrigerators, which could automatically order produce and pay for it upon delivery.[6]

The **energy sector** is also applying blockchain. RWE, for example, is working on an electrical outlet adapter for electric vehicles. The adapter can be plugged into any power outlet and then connected to a vehicle. It's not the owner of the electrical outlet that is billed for the power consumption, but the owner of the vehicle. What the blockchain does is note how much energy is consumed in charging the vehicle.[7]

No industry will get by without blockchain in the **supply chain management** of the future. That is because the use of blockchain will enable everything – from the raw material to the finished product to its ultimate recycling – to be documented and monitored from start to finish with no gaps. Smart sensors may be used to do this. Products like meat, for example, can be shipped in containers, whereby if there was any break in the cool chain the sensors would pick up on this and payments would not be released.[8]

People are also talking about **smart contracts** in this context. These are computer programs that represent contracts and automate the contract handling process. To enable this to happen, contract compliance is monitored in real time and the rights of the contractual parties are asserted automatically. Leasing agreements are one example

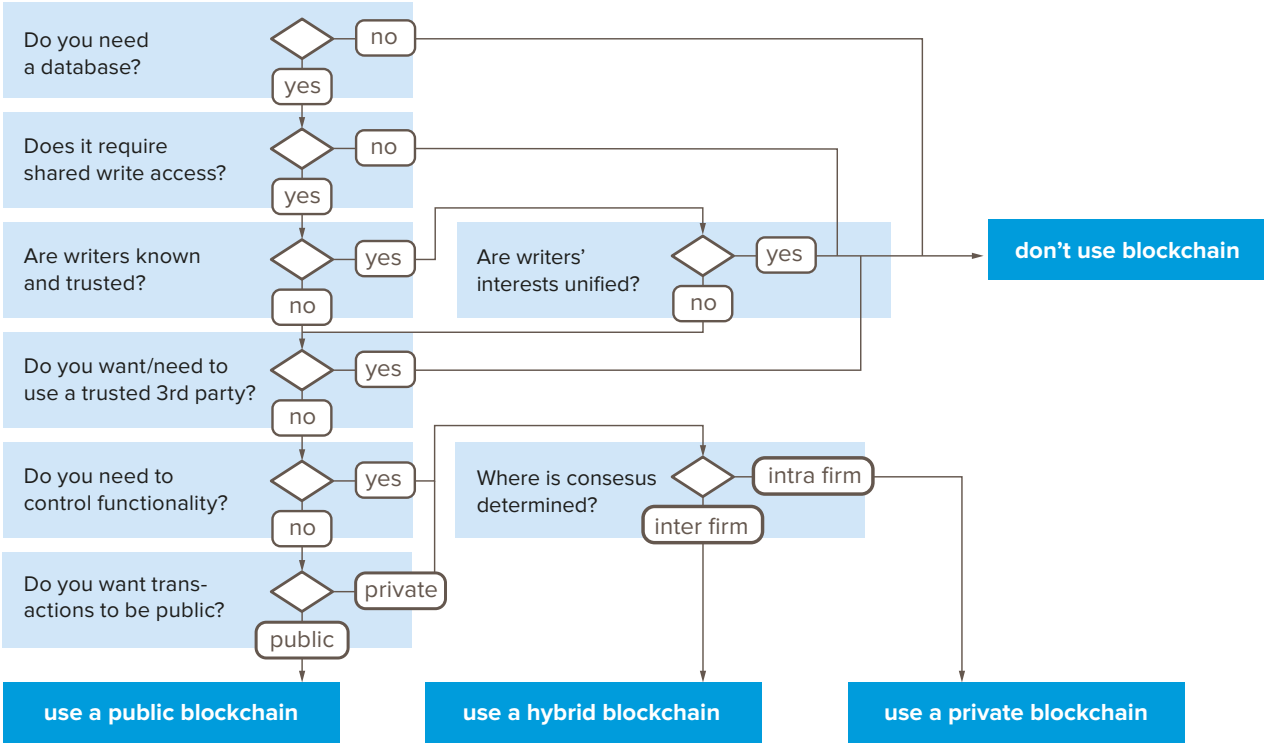


Abb. 1:
Do you even need Blockchain? according to Bart Suichies, December 2015

of where smart contracts can be used: if a customer does not pay the monthly installment for their car, access to the vehicle can be automatically blocked.[9]

Blockchain in the real estate industry

The question is, whether blockchain technology also makes sense for use in the real estate industry. One area in which it could be used is to automate rental contracts as in the leasing example above, whereby the apartment door would remain locked if the tenant failed to pay the rent. Unfortunately the legal framework does not allow for this at the present time.

Another scenario that is already possible today concerns the automation of maintenance and claims management. Detecting damp in the walls, spotting mold and mildew, having defects reported by the tenant, getting the painters in, accepting, paying and even proving insurance and warranty claims are all procedures that can be automated. Things like this that might involve numerous interfaces today will be completely automated in the future with smart wall sensors. R&D departments are currently working on developing such sensors that may well help to significantly automate cost-intensive processes.[10] The way it would work is as follows: the sensor would be installed in or on a wall and permanently measure the condition of the walls as well as the temperature and humidity in the property. This data would then be stored in the blockchain. If there was a brief spike in the humidity level inside the apartment, the tenants could be contacted by smart phone and asked to air the property, or a window could be opened automatically. If the level stayed high for a lengthy period, this would trigger a home visit. In the event of water damage, the water valve would be closed and a call placed with the emergency services. Any successful repair activity would be noted in the blockchain. With a smart contract in place, the payment to the service provider would be triggered automatically. And the insurance company, again with a smart contract in place, would be able to trigger the payout to their customer because the data from the sensor would provide proof that water damage had occurred. So what this does is turn concrete into a smart material that supplies the landlord with valuable information. It's not uncommon for there to be a disagreement with tenants about humidity levels, mold and mildew and fluctuating temperatures in a property. The use of smart sensors can help more quickly to identify and, crucially, to prove what caused it.

Currently, many companies are also considering how entire real estate transactions can be handled through the blockchain, or certain process steps (cutting out various intermediaries) can be optimized with its help. Notable firms include chromaway.com, rexmls.com and ubitquity.io. If these projects prove successful, this would be another major step toward the enhancement of existing platform solutions. The Australian platform pexa.com.au, for example, already facilitates the transfer of real estate on an almost completely paperless basis. It is, however, highly restricted, with only licensed intermediaries such as lawyers,

notaries public and financial institutions having access to the system. True disruption of the real estate transfer process will not be achieved in this way, unlike with blockchain technology.

Blockchain in your company

So, if you are now playing with the idea of using blockchain technology in your company, we have put together a few important things to note. Of course we cannot possibly say for sure whether or not blockchain is right within the real estate industry context – and whether or not you should use blockchain in your company depends on the specific scenarios for which you wish to use it. Do you need a database? Is it sufficient for you to have control over the data? Are you going to be making payments with it? These are just some of the questions that need to be answered before you start planning the implementation of new technical solutions. But once you've done that, the use of blockchain can add significant value. It may be helpful to adopt a visionary perspective. Few companies today have a detailed record of all the components used to construct the buildings in their portfolio. But that is going to change, partly as a result of the increased promotion of BIM by policymakers. So why not think about future-proof solutions right away? As part of a dedicated analysis, Fig. 1 can help you identify whether using blockchain could be advantageous to you generally speaking, and what type of blockchain – public, hybrid or private – would suit you best.

Going back to our example with the wall sensors, this would mean deciding whether the smart wall should communicate only with the caretaker (for standard cases) or the company's own engineer (for more complex measures) when it identifies a need for communication. If so, a private, company-internal blockchain can be used, which may involve putting in place a reliable ticketing system and linking it up to smart objects.[11]

If, on the other hand, you wanted to exploit the full extent of the possibilities available with a smart wall, it would need at the very least to be integrated into a hybrid blockchain (consortium blockchain) to which tradesmen and insurance companies were also connected. This would be the only way to enable automated communication with them.

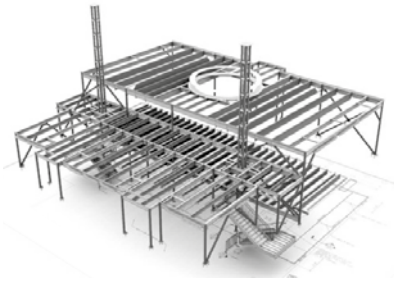
And if you wanted to create an open platform with the potential for its applications to grow and with no restrictions on the types of people who could participate in it, or even with the ability for the public to act as the control body, ensuring that none of the parties involved ever had a monopoly in the blockchain, then a public blockchain would be the right way to go.

Summary & outlook

Blockchain could very well be a game changer in the real estate sector. Buying and selling properties, utility billing, renting – in almost every area there is the potential for blockchain to be used. Currently, however, it remains mostly a mental exercise. The crucial thing will be whether meaningful use cases can be identified that are actually possible from a legal perspective. That said, the real estate sector needs to get creative and think proactively about possible application scenarios. Policymakers have long been thinking about blockchain, considering what underlying framework they need to put in place to enable it to be used in any meaningful way. Ideas range from giving each individual a blockchain private key stored on their ID card to giving robots and artificial intelligence legal personality so that they can act autonomously. Whatever happens, blockchain is a subject that the real estate sector will certainly need to address.

1 http://startupmanagement.org/2014/12/27/the-blockchain-is-the-new-database-get-ready-to-rewrite-everything/
2 https://coinspondent.de/2016/11/30/sfr-zeigt-preisgekroenten-blockchain-beitrag/
3 https://www.technologiestiftung-berlin.de/fileadmin/daten/media/publikationen/170130_BlockchainStudie.pdf
4 Possession of cryptographic keys proves ownership of the monetary unit. That is why Bitcoin is known as a cryptocurrency.
5 http://www.faz.net/aktuell/finanzen/digitalisierung-banken-glueckt-baumwoll-lieferung-per-blockchain-14497029.html
6 http://www.deraktionaer.de/aktie/professor-beck-zu-blockchain-und-bitcoin---deutschland-hat-den-knallnicht-gehoert--289900.htm
7 https://www.wired.de/collection/business/die-blockchain-im-alltag-vier-beispiele-wie-das-geht
8 http://futuregram.trendone.com/blockchain/blockchain-und-die-versorgungskette/
9 https://www.computerwoche.de/a/blockchain-im-einsatz,3316539
10 http://versicherungswirtschaft-heute.de/unternehmen/blockchain-technik-ersetzt-schadenabteilung/ ; http://ubirch.de/
11 https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/Innovation/deloitte-uk-internet-of-value-exchange.pdf

BIM



Digitalizing Construction with Building Information Modeling – Is There Potential to Be Had for the Real Estate Sector?

Major construction projects in Germany all too often end up with huge budget and build-time overruns. We have seen that in projects like the Elbe Philharmonic Hall in Hamburg and Berlin Airport. Building Information Modeling (BIM) promises greater planning security and easier control of projects. For this reason, the government has drawn up a phased plan for the introduction of BIM in Germany. Federal Transport Minister Alexander Dobrindt defined it as a national objective to introduce BIM as the planning standard for major infrastructure projects by the year 2020.[1] In January 2017, Dobrindt additionally presented a "Construction 4.0 master plan" as an extension of the phased plan.[2]

BIM can be used not only to model the planning and construction phase, but to map out the entire lifecycle of a building. The use of BIM could be of interest to residential real estate companies during a building's operational phase in particular. After all, if you consider the entire lifecycle of a building, the planning and construction phases account for just 2–3% of the building's useful life on average. Some 15% of total costs are incurred in these two phases. But the remaining costs come mainly in the operational phase and it is here that BIM can optimize processes and cut costs.[3] So what exactly is BIM?

BIM – What is it, exactly?

BIM is first and foremost a cooperative method of working based on a digital model (a smart 3D model). The aim is to capture all of the processes and information relating to a building in the early planning and design phases and connect them together in a way that is transparent for everyone involved in the project. What this does is simplify the process of modifying the plans in later phases of the project and it optimizes time schedules, construction costs and project risks.

Basically, BIM can be split into four key elements (see Fig. 1). The digital model of the building serves as a working basis for all the project participants and brings together all relevant information on the building. The smart 3D models consist of more than just lines, surfaces and volumes – they also include objects specific to the building (e.g. walls, doors and windows). The structural elements are recorded in the model along with their specific properties such as material, manufacturer, lifetime, maintenance intervals, etc.

Throughout the entire process of planning and constructing the building, the model is continuously filled with data, enhanced and kept up to date. All of the processes and measures taken within the construction project can be managed more efficiently when a BIM model is used. The digital model allows all project participants access to the data, which they can then share and modify. This guarantees that everyone is always on the same page as the project progresses and facilitates better cooperation. The digital model can be used to conduct a diverse range of analyses (e.g. cost analyses, simulations, etc.), which permit detailed insights into quantities, costs, timings, and so on. Alongside the possibility of producing integrated analyses with the help of the digital building model, other relevant documents can also be generated from within BIM. As shown in Fig. 2, these range from two-dimensional drawings (e.g. draft or detailed designs) to three-dimensional design visualizations and virtual building walkthroughs to a bill of quantities for the performance specifications.

The creation of smart, three-dimensional building models with integrated information on components simplifies the work of architects and technical planners. First advantages arise from the use of BIM mainly in the planning and construction phase. Planning quality can be significantly improved through simulations and collision checks. This enables subsequent changes and additions to be minimized along with interface risks, and also permits the early identification of design errors. Costs can be optimized thanks to the model-based analyses and cost simulations and, in fact, costs are also reduced down the line because quan-

Controlling

The continuous use of BIM enables the efficient controlling of processes and measures in the planning and design phase as well as the operational phase of a building

Model-centric processes

A 3D building model forms the core of BIM

This digital model is the basis for work processes and performance standards

Cooperation & data management

BIM provides a framework solution for cooperation and a data management tool for controlling the sharing of relevant and precise information between all project participants

Integrated analyses

Building models need to be analyzed in each phase of their lifecycle

Analyses begin in 2D and, with increasing complexity, start to incorporate 3D, 4D (time) and 5D (costs)

Fig. 1:
Key elements of Building Information Modeling

tities and costs are precisely calculated. Time, too, can be saved with the use of BIM, given that it permits the faster implementation of design alterations. Not only that, but the level of transparency and availability of data means that decisions can be made quicker.

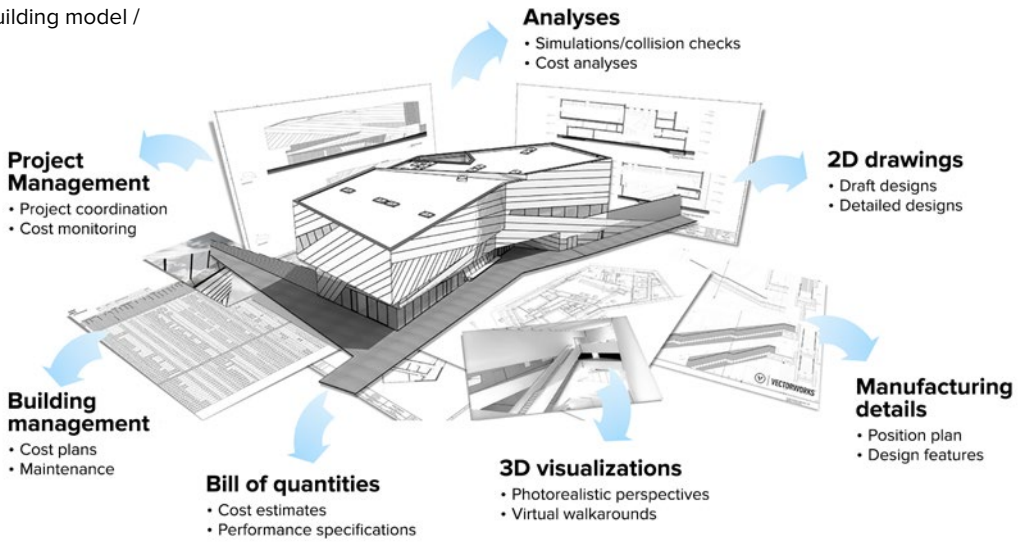
At first glances, it might appear that BIM is a method primarily aimed at the design and construction phase of buildings and that most of its benefits will be felt there. But BIM is not just for these two phases – it spans the entire lifecycle of a building. The digital model can be very useful in the operational and end-of-life phases of a building, making the use of BIM there well worthwhile.

BIM for the residential real estate sector

At the end of a building's construction phase, the construction firm hands over an as-built model of the building to the client. The corresponding BIM model is an exact virtual copy of the building as it stands in reality, and contains all relevant information. The handover of the digital model, containing all of the building's data, at the point of transition from the construction to the operational phase offers the big advantage that it prevents any loss of knowledge. The fact that about 50% of the costs of subsequently introducing a CAFM (computer-aided facility management) system are incurred in the course of capturing and processing information on the building itself and its contents serves to make this all the more apparent. As much as 10–30% of this data is generated during the design phase.[4] When the conventional method of planning and design is applied without the use of BIM, such data is not recorded in any usable way. Utilizing BIM therefore presents many opportunities for the residential real estate sector to optimize the management of buildings on the basis of the digital model.

CAFM systems are used to support the facility management team in operating a property. To ensure the operational capability of a CAFM system, there needs to be a standardized, well structured and comprehensive database of alphanumeric and graphical data plus relevant documents in place. And the CAFM software needs to be connected to the BIM model in order to make the building data stored in the digital model usable for a residential

Fig. 2:
Functions of the digital building model /
© Grafik Vectorworks Inc.



real estate company. In this context, the BIM solution (Fig. 3), which is inherently based on CAD (computer-aided design) software, forms the basis for adding in other optional programs with (industry) specific functionality. The bulk of the data that requires processing in facility management is alphanumeric (e.g. lists of rooms and spaces, lists of doors, lists of technical systems and structural components). When this data is taken out of the digital BIM model and transferred to a CAFM system, the data basis that results enables facility management tasks such as maintenance planning, fault management, cleaning management, etc. to be completed more effectively. Graphical model data is of secondary importance. In a facility management context it can be used to manage spaces (layout planning, move and relocation management, etc.). Besides the alphanumeric and graphical data contained in the BIM model, documents produced in the course of the construction project can be used during building operations.[5] The existing digital model can also be taken as the basis for refurbishment, remodeling or demolition measures – for precise planning and design and for the calculation of quantities. Positive effects in the management phase of a given property are achieved in the long term assuming that the BIM data model is regularly updated with new data captured by sensors. In that case, you would always have access to the latest condition data on all technical facilities with maintenance or traffic safety relevance.[6] Cutting-edge technology could also be applied here. Drones, for example, could be used in facility management to measure energy loss and document tiny cracks in the building envelope.[7] It must be said, however, that these potential uses of BIM in facility management are not reflected in practice in Germany today.

Fig. 3:
Various program components can be linked in to the BIM model

Summary

The outlined potential for the use of BIM throughout a building's entire lifecycle is not yet realized in Germany to any great extent. BIM is most commonly used here in the design and construction phase of buildings. Internationally speaking, BIM is much more widely used in some countries, including the UK, USA and Scandinavia. Since April 2016, the use of Building Information Modeling is in fact a mandatory requirement on public sector construction projects in the UK.[8] Facility management in the context of BIM is not yet established in Germany. Technologically speaking, facility management can already be included in BIM projects. There are international data standards such as IFC (Industry Foundation Classes) and the COBie standard (Construction Operations Building Information Exchange) which enable data sharing in the facility management context. So why is it that BIM is not yet being applied in facility management in Germany? The answer to this question is none too clear. What is certain is that a lot more needs to be done to inform the relevant players in Germany about what BIM can do. Added to that, particularly in the facility management context, there is a lack of German reference projects to demonstrate the added value that BIM offers and to prove that it works.[9] With the BIM method not really having established itself among building designers in this country yet, it doesn't have much of a presence in the facility management sphere. This is more of a secondary effect and the technology's presence can be expected to increase as BIM spreads generally and becomes more widely used. As described above, the first steps in this direction have already been taken by the government with its phased plan for the introduction of BIM in Germany and the Construction 4.0 master plan. The technical and theoretical basis for the use of BIM is in place. It is now down to industry players themselves to start putting it into practice. So, what are we waiting for?

1 See BMVI (2015), n. pag.
2 See Beuthan (2017), n. pag.
3 See N.N. (2014), n. pag.
4 See N.N. (2014), n. pag.
5 See Bender/Schlundt (2016), n. pag.
6 See Bogenstätter (2016), p. 8.
7 See Beuthan (2017), n. pag.
8 See Beuthan (2017), n. pag.
9 See Bender/Schlundt (2016), n. pag.

Going Digital Faster

Lean Digitalization – How to Digitalize Your Real Estate Company Like a Startup

Startups are fast, no doubt about it. There are many reasons for that. Naturally it is easier to reach agreements and make strategic decisions in a small team with the boss present at all meetings. But it's not only that: the everyday internal, operational business of a well managed startup is uncompromisingly designed for efficiency, particularly when it comes to product development. This explains how good startups are able to overtake companies that have been successfully operating in the market for decades.

One of the reasons for their success is that startups employ a specific method to move their product development activities forward. In 2008, Eric Ries published a book called "The Lean Startup". In it he depicts the product development process as a constant feedback loop with the customer. The principle is to go to market quickly, even if the product is not perfect. In the startup world, some even say that if you are not ashamed of your first product, you must have spent too long on it. The market will test the products and give the startup feedback on what is good, what is less good and what doesn't work at all. This feedback then serves as the basis for the next step in the product development process.

When real estate companies think about digitalization, they often – and quite rightly – think mainly about things like changing their ERP system from one provider to another. Huge volumes of data need to be moved. A project like that takes a long time and costs a lot of money. After all, it involves considerable effort in training staff to use the new system. A properly set up, cutting-edge ERP system is undoubtedly worth all the effort, but it certainly takes a lot out of an organization.

That said, digitalization on a much smaller scale, with a much smaller budget and a much shorter timeframe can achieve a great deal too. We at RITTERWALD have therefore developed a method which enables even large corporate groups to move forward with digitalization in short sprints based on lean startup principles. Our aim is to give our clients the opportunity to drive their own digitalization the way a startup would.

In a traditional digitalization project, the first step would be to analyze the status quo. That means measuring how digital the company already is and what digitalization projects are already in place. Then other opportunities for digitalization would be identified and their potential measured. The identified approaches would then be implemented. This approach is well suited to companies wishing to take deliberate steps to change their organization from the ground up.

In lean digitalization we turn this logic on its head in order to achieve results fast: we go straight to the pain points and take action immediately. First we select a process in collaboration with our client. It should be a process that is fairly significant for the company, tying up a lot of resources. And it should be one that is not yet fully digitalized – which will usually be the case anyway. We then meet with the process owners to identify where the problems and bottlenecks are. From this point on, the work will focus on the most serious issues.

With our understanding of the market for software providers and startups we are in a position to pinpoint digital solutions for the problems identified. We'll then speak with our client to decide which solution to choose and we subsequently implement it over the next few days. The aim is not to change the organization wholesale, but to take small steps which will have an immediate effect. Let's look at the rental process by way of example.

Lean digitalization in the rental process

PROBLEM Let's assume that a discussion with the Head of Rentals reveals a significant problem, which is that property viewings represent the most time-consuming part of the process. Each residential unit is averaging three viewings, which is significantly above the regional average.

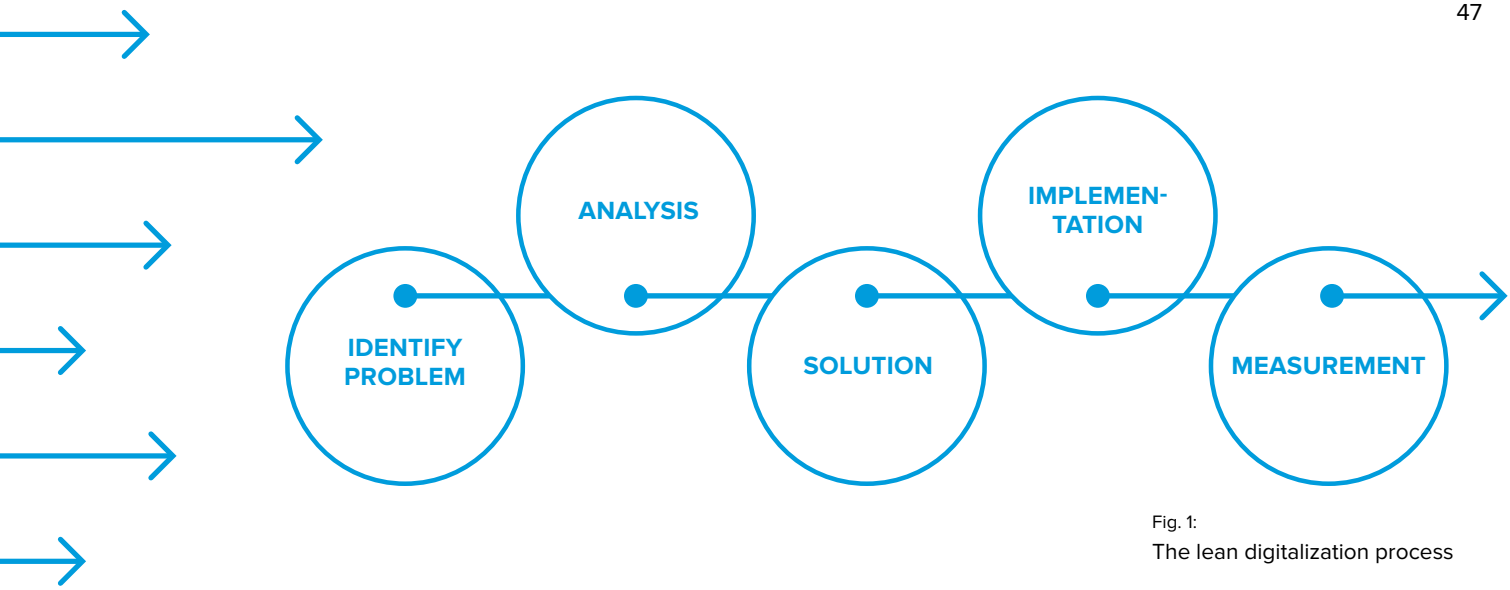


Fig. 1:
The lean digitalization process

ANALYSIS Viewings can be outsourced, which will normally save money. But digitalization offers a much bigger lever. You need to look at why several viewing appointments are always necessary. The main reason will be that the viewer is not actually the right applicant for the property. Assuming there's nothing wrong with the residential unit itself (too expensive, horrible carpets, bathroom in a poor state or similar), what you need to do is improve your selection of applicants in order to reduce the number of viewings. This does not mean examining every last detail of every applicant in advance. That would just shift the effort from one point in the process to the next. What we can do is automate the selection process and raise the level of quality.

SOLUTION There are many different providers offering solutions in this segment. Most of them generate a list of the inquiries that come in through the usual property portals. Since the applicants normally supply information about themselves, such as their salary and employment status, this data could also be analyzed and utilized via filters. In a few clicks it would then be possible to filter out the most suitable of all the applicants.

IMPLEMENTATION Having presented the identified solution to our client, we would then sit down together and select a suitable provider. The chosen provider would come in and present their solution and offer you a trial of the product. We can help with any requested software adjustments (such as standardizing user access rights and the like).

MEASUREMENT We can now literally take a stopwatch and identify whether or not the new method is better. If it is, implementation can begin. In our example here, the number of viewings would be analyzed. If the number of viewings necessary to fill a unit falls from 3 to 1.5, the resulting savings can be compared against the cost of the digital solution. This would make the added value immediately apparent and significantly speed up a tricky step in the process, and the costs of implementation would be relatively low.

The advantage of employing the lean digitalization approach is the speed with which success is achieved. Good news quickly gets around a company as soon as processes are improved, as described above. You can then expect employees to come forward with their own suggestions for modifications. This can trigger a real avalanche of improvements, which then just needs to be guided in the right direction by management.

From digitalization to cultural transformation

When people start telling each other the digitalization success stories, the kinds of barriers that usually need to be overcome through change management will be broken down by the employees themselves. What the company will experience in this phase is a minor cultural transformation. Innovation will be carried through the company from the bottom up, rather than being decreed top down. Even if you already do this in your company, digitalization is the perfect way to live this culture of innovation.

Approaching digitalization in small steps, known as sprints, as a way to solve specific problems, inspired by the lean management principles, is a great way of picking up the pace. When employees are involved in the process in the right way and given the opportunity to present their own ideas, you will find that it is the employees themselves who make the journey go even faster.

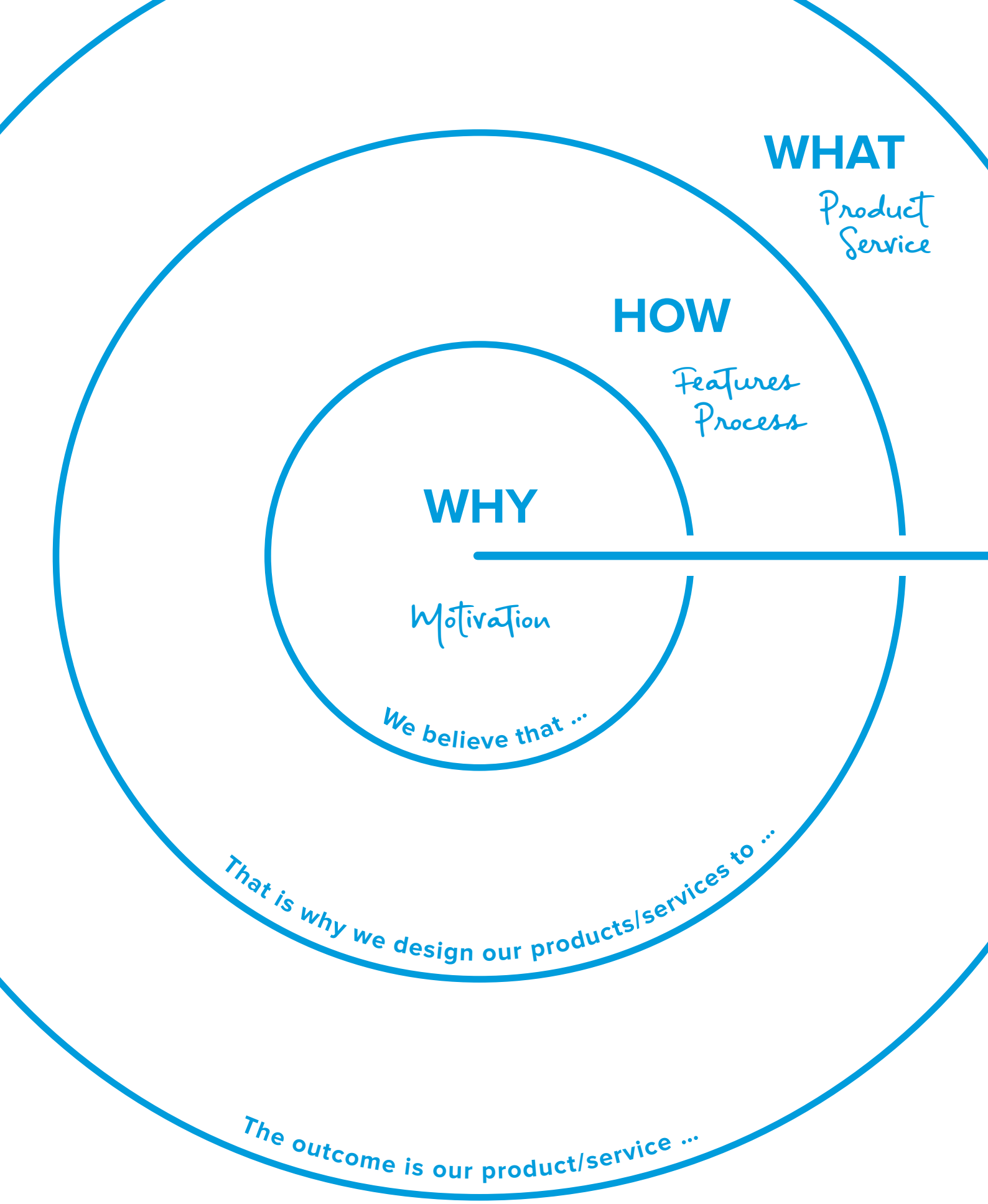


Fig. 1:
Sinek's Golden Circle

The Golden Circle

Successful Digitalization Hinges on the Right Communication

Be inspiring! This is a message people like to hear. At conferences, coaching sessions, seminars and other events besides. If we want to lead, to develop our people, to make them loyal to the company, and to evolve our organization, we need to inspire the people around us, our colleagues and employees. And our efforts toward digitalization are no different: success hinges on the right communication. Even the best solution will miss the mark if people don't get behind it. The right type of communication does not need to be showy à la Steve Jobs – what it needs most of all is a considered approach.

Digitalization ostensibly affects the key business processes, but what it really affects is the workforce. It is the employees who are confronted with a new, restructured and technified world in which they are supposed to find their way very quickly. Although the need for business process digitalization is easily quantifiable in business figures, it is hard to get people excited about KPIs. Digitalization can only work if everyone is behind it. So how can a company persuade its workforce and its customers of the positive aspects of digitalization? The answer is simple. The way to persuade people is not to attempt to talk them round or to bombard them with facts. The way to persuade people is to inspire them. Simon Sinek's Golden Circle shows you how.[1]

The Golden Circle

The theoretical concept behind the Golden Circle (Fig.1) is all about the core belief of the business – about what gives the company the motivation to produce certain products or services: what does the company do, how does it do it and why does it do it? This key message (the WHY) forms the basis for corporate communications and indeed for the entire corporate culture. So, what does that mean, exactly?

The Golden Circle method can be illustrated with a simple example. The marketing for a premium car first and foremost answers the question of what the car can do (the WHAT). The car has enough space for a family of four, and all their baggage. It is very economical, consuming just 2.3 liters of fuel per 100 kilometers. It accelerates fast and develops 165 bhp. It costs only EUR 20,000. No one is very likely to buy the car when it's presented like that. Customers have heard these facts many times before – inspiration is something quite different.

The next step is about explaining how the product achieves this (the HOW). The car was designed to have a lot of storage space. It was built with a special lightweight method which minimizes the amount of weight that needs to be moved. It has an innovative combustion engine that enables the car to accelerate fast without consuming large amounts of gasoline. Smart production methods were used to manufacture the vehicle, resulting in lower production costs. All of these arguments are true, but again they do not provide the inspiration for someone to buy this car.

The right communication centers on the WHY. Why does the firm making the car exist and why are they making this particular car? Our company believes that owning a car can be a sustainable and modern means of mobility and is fun. That is why our cars are cost effective and deliver excellent performance and quality. And the special lightweight construction and innovative engine technology we employ guarantee very low fuel consumption. Our cars offer plenty of space for a family of four and cost around EUR 20,000 for 165 bhp.

When you start with the WHY and move forward from that, the result is much more effective communication. People don't buy the WHAT – they buy the WHY. Successful corporate communications should always start with the WHY and work their way from the center of the Golden Circle to the outside.
Digitalization should be communicated in just the same way. Normally you think from the outside in. The WHY is usually only revealed at that point. Once you've identified the WHY, you then communicate from the inside out. For a residential real estate company, the three segments of the Golden Circle could look like this:

WHAT

- There are numerous providers of algorithms that can help tenants find suitable apartments quicker.
- There are ERP systems that companies can use to manage and value their assets.
- There are providers of HR software with which you can manage your personnel and administer their files.

HOW

- The algorithm compares the requirements specified by the landlord against the profile of the tenant, shaving as much as two thirds off the time it used to take in the conventional rental process.
- The ERP system maps all the business processes and assets under management using a software system and enables process optimization.
- The software provider aggregates all relevant data on each employee in their digital personnel file and saves time and money in HR management.

WHY

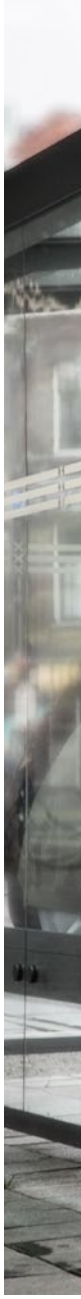
- We are a residential real estate company which aspires to be a good landlord for our tenants and an attractive employer for the people who work here.
- We are a company which believes that digitalization is changing the world and we want to play an active part in shaping that change.
- We are a real estate company which believes that digital methods make our company stronger, benefit our employees and our tenants, and are easy to learn.

Communicating from the WHY outwards, the resulting message is: we are a residential real estate company which aspires to be a good landlord for our tenants and an attractive employer for the people who work here. That is why we are focusing on a modern form of human resource development and are introducing HR software that is more transparent and simpler for everyone. In order to do this we need to digitalize your personnel file and we are counting on your agreement and your help.

The answer to the WHY question should be embedded in the company's corporate strategy and its digitalization strategy. When this is the case, it is easy to answer the WHY. And it also ensures that the initiatives the company takes are all moving in the right direction. These strategies represent a framework which adds even more substance to the WHY and fills it with life.

Summary

This brief overview shows how the right communication can be a strong tool in getting people onside. In this context, the Golden Circle method is a good way of achieving successful and targeted corporate communications. Even with complex and abstract topics like digitalization it helps to translate them into substantial core messages that people can identify with. Be inspiring!



1 See Sinek (2013), n. pag.

SPOTLIGHT

Communication and the human brain

Sinek explains his method with reference to the structure of the human brain. The innermost elements (the WHY and the HOW) of the Golden Circle activate the limbic system within our brain. The limbic system is the center of emotion and human behavior. It is also where human decisions are made. But it is not the center of language. Language originates in another part of the brain, the neocortex. In the Golden Circle, this equates to the outer part (the WHAT). This is also where rational and analytical thinking takes place. Emotions, which emerge from the limbic system and influence our behavior, are rationalized in the neocortex. So corporate communications need to do is address the part of the brain that forms the center of emotions and the decisions we make. To do that, communication employing the Golden Circle method must start with the WHY and proceed outwards. The first step is to clarify the company's key message: what does the company believe in, and do I believe in it too? People who identify with the key message being communicated by a company are then more likely to be willing to buy their product. So if you want to "sell" digitalization to your own employees and your customers, the first thing you need to do is answer the WHY question, clarifying for them the company's key message.

Connectivity within all environmental, social, economic and cultural aspects of city life is at the heart of the smart city approach.

Connected Thinking

Energy-Efficient Neighborhood Development in the Smart City Context

What does a neighborhood on the outskirts of Berlin have to do with the steady rise in digitalization? At first glances, nothing at all. But take a closer look and you will see certain overlaps. The advancing pace of digitalization has long been one of the megatrends of the 21st century, and it is one that is growing in importance. Modern information and communication technologies enable us to capture and process data much faster. This in turn generates a digital, connected data basis for other technical solutions. Which creates the potential for optimization and automation in almost all spheres of life. These disruptive technologies enable innovative business models and facilitate greater flexibility and individualization. That is why digitalization is often considered to be synonymous with the fourth industrial revolution or Industry 4.0.

But what does this have in common with urban development and the smart city? Quite a lot, as it turns out, given that the possibilities brought by digitalization are instrumental in the development of a sustainable city. Cities have a great many different challenges to face on a daily basis. If these are to be overcome, the city infrastructure needs to be effective and it needs to function efficiently. Incorporating innovative, digital technologies in the urban system makes cities better able to fulfill their role.[1]

The smart city approach (Fig. 1) is a strategic innovation concept which aims to overcome the future challenges facing cities in the environmental, social, economic and cultural sphere.

The objective is to apply smart technological solutions. Problems can arise for cities through constant population growth, bringing with it for example an increased need for housing, a different way of using resources (water, energy, data) and an increased requirement for mobility and infrastructure modifications. Our aging society and the structural transformation of our cities are issues that will be increasingly relevant as time goes on.

So how can all of these problems be resolved? One aspect involves cooperation across areas and across government departments, which is what the smart city approach aims at. The goal is to drive the development of potential solutions. It is going to become increasingly important for cities not only to sustain but successively to improve the standard of living for their residents on the basis of the same or even fewer resources. The key objective of the smart city approach is therefore to optimize public services long term by means of smart urban management and technology-based collaboration between public authorities, municipal enterprises and social agencies. This also involves conserving resources by making use of renewable energies and achieving increased levels of energy efficiency.[2] How can these theoretical goals be achieved in practice? A first step is to realize these ideas in one neighborhood of the city. The development of neighborhood

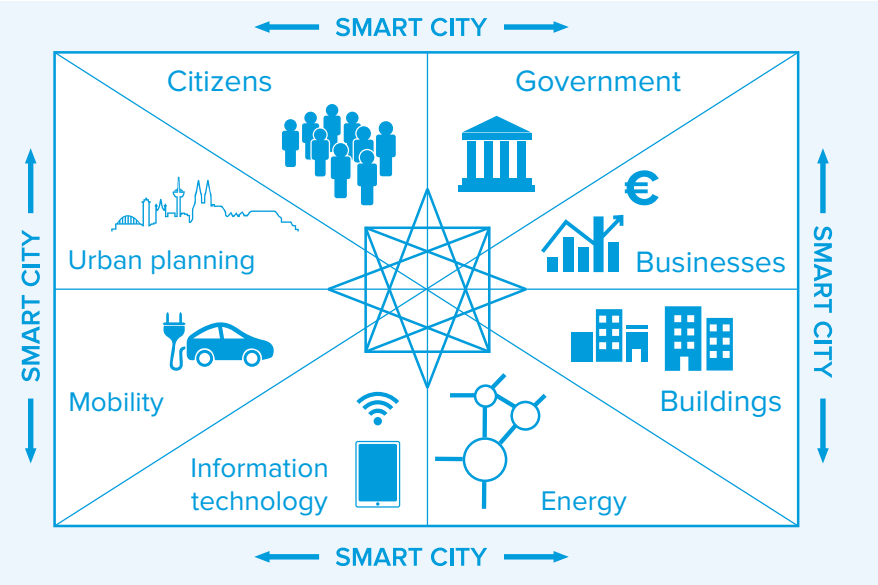
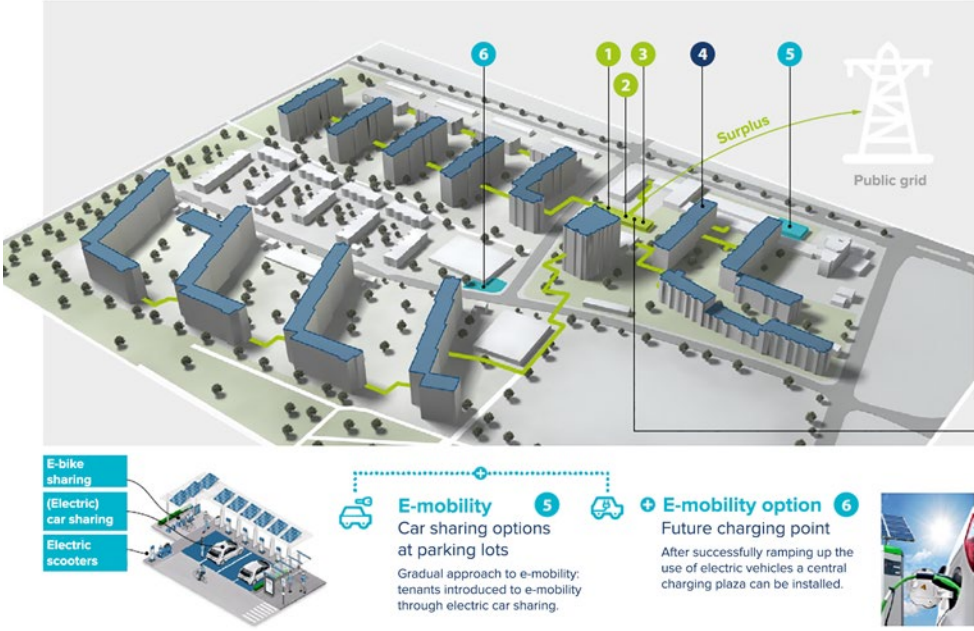


Fig. 1:
The smart city approach

Fig. 2:
Components of the energy-efficient neighborhood concept



concepts is one contribution toward the operational delivery of the smart city mission in respect of saving resources. Buildings being a significant factor in a city's energy and resource consumption, the way in which neighborhoods are supplied with energy can help resources to be conserved and used more efficiently if innovative solutions are applied in the form of holistic concepts. These might for example involve using combined heat and power (CHP) or solar power plants. Innovative technologies allowing people to generate their own electricity or facilitating energy savings and efficiency enhancements can be piloted in individual neighborhoods.[3]

Project outline

A practical example can serve to illustrate the potential of energy-efficient neighborhood concepts. In collaboration with RITTERWALD, a housing association in Berlin intended to invest some EUR 2 million in developing an innovative energy supply concept for a neighborhood in a certain district of the capital. The estate in question was built in the 1960s and is located on the outskirts of the city. The neighborhood consists mainly of multistory residential buildings (approx. 1,700 apartments) and can accommodate 5,000 people.

The main objective of the energy-efficient neighborhood concept was to guarantee the supply of heat and power for the apartments attached to the grid, and to optimize consumption levels. The possibility of realizing environmentally friendly and cost-effective power and heat supplies was an aspect to be examined in the process. Smart mobility concepts like e-mobility and car sharing models offer added value for the tenants, as do new technical possibilities in the field of submetering services. Another factor that had to be considered in planning the energy-efficient neighborhood concept was the work currently under way on the buildings themselves. The apartment buildings were currently being successively renovated, with much of the work still remaining to be done. The government's "Stadtumbau West" subsidy program for the part of Berlin where this neighborhood is located also had an influence given that there were plans to increase the density of the estate by adding a further 100 apartments. These apartments had to be taken into consideration in any energy supply concept.

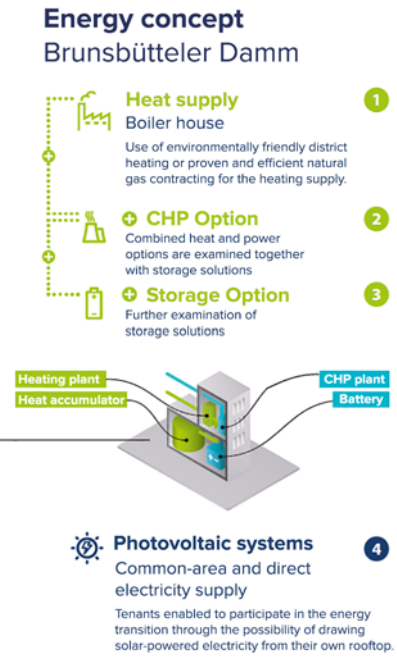
Energy-efficient neighborhood concept

The concept that was ultimately developed (Fig. 2) combines various different components under a number of multidisciplinary topics to arrive at a holistic, energy-efficient solution for the neighborhood. Each topic cluster involves various options, each in turn incorporating innovative technologies.

Heating supply

One of the key concerns for residents is their heating supply, security of supply being uppermost in their minds. The average heat consumption in the years 2013 to 2015 was 16,705 MWh per year. Heating is currently provided by a gas fired heating plant transporting the heat through a 2.8 km network of piping. But with the existing supply agreements expiring at the end of 2017, a new solution to maintain the estate's heating supply needed to be found. There were several possible variants:

A conventional solution would be to connect the neighborhood up to the heating grid operated by the local district heating supplier. To do that, however, a new network of pipes would need to be installed (approx. 2.7 km long), which would necessitate about EUR 2 million in investments. The key risk to the neighborhood's security of supply would center on whether or not it was possible to connect the estate up to the district heating system in time.



The neighborhood's heating pipes, then owned by the housing association, were earmarked for transfer to the district heating supplier in the course of connecting the estate up to the heating grid owned by the latter. District heating could cut the estate's annual CO_2 emissions by about 1,000 tons.

Another option would be to enter into a heat contracting agreement involving the use of the existing central boiler house. Here, too, the plan would be to transfer the heating pipes to the contracting company. Biogas could be used as an alternative to conventional fuels in this scenario. This would incur additional costs, however: a 10% biogas admixture would raise the price of the heating by about 10%. That said, operating the heating system on biogas would reduce the annual CO_2 emissions by about 1,400 tons compared to operating it on natural gas.

Operating distributed heating plants under a heat contracting model could significantly reduce the length of piping required for the heating system and with it the extent of the heat loss. This would save some 500 tons of CO_2 per year.

Wood pellet heating plants operated under a contracting model represent another innovative supply solution. The network of heating pipes is transferred to the contractor in this model too. But operating a pellet heating plant is a relatively complex business. A pellet storage facility would need to be built in to the cellar of the current boiler house. Besides the investment costs for building the pellet store, the operation of the plant would produce higher fine particulate emissions and noise pollution from the weekly delivery of pellets. The considerable cost of maintenance and servicing, as well as the fact that an operator would always need to be present, would substantially increase the heating price. Nevertheless, the use of wood pellets as a renewable fuel makes good environmental sense. Compared with operating a heating plant on natural gas, this option would result in about 2,000 tons lower CO_2 emissions per year.

Combined heat and power plants (CHP) are another option for producing heat cost effectively. However, the plant does need to be operated above a certain minimum level. Because the neighborhood in question would require only about 2,500 hours of full utilization from such a plant, CHP is not considered an economical solution in this case.

Electricity supply

Another of the energies that needs to be supplied is electricity. In the period 2013–2015, the average electricity consumption across the housing association's properties amounted to 466 MWh per year to supply the estate's common-area electricity needs and required heating output. The residents' private consumption amounts to some 6,205 MWh per year on top. There is considerable potential here to establish a direct electricity supply model (known in Germany as *Mieterstrom*).

A solar power solution on a medium scale could cover the neighborhood's common-area electricity needs. The amount of roof space available for photovoltaic (PV) cells would need to be examined. The renovation work that has already been carried out saw the addition of some rooftop technical structures, thus reducing the amount of usable space. About 40% of the roof space is currently available to use for the production of solar power. Across the whole neighborhood, this amounts to a total area of some 8,000 m2. The realization of a medium-scale PV solution in the form of an operator model would result in no further investment costs. An installation of this type could cut annual CO_2 emissions by around 70 tons. That said, it would make better environmental and economic sense to install a PV system to generate electricity for the tenants' private consumption as well.

A large solar power solution could both supply the estate's common-area electricity needs and cover the ten-

Incorporating mobility solutions into the neighborhood concept adds considerable value for the people who live there.

ants' electricity requirements. But it would necessitate installing photovoltaic cells on every inch of usable roof space across the estate. An operator model would avoid any additional investment costs in this scenario. The electricity would be sold in a direct electricity supply model and marketed as a separate brand. The tenants could therefore benefit from low-cost renewable electricity. For customers the price would be about 2 cents/kWh below the general electricity tariff (28.48 cents/kWh). It would, however, be necessary to gauge the tenants' interest in the direct electricity supply model in advance. A penetration rate of 30% of the tenants on the estate would be necessary to break even with the direct electricity supply model. A large solar power solution which could also supply the tenants offers a potential CO_2 saving of about 570 tons per year.

The option of storage batteries should be considered for both of these solar power solutions. Though such battery solutions are not yet profitable at the current time, this could change in the future.

E-mobility solutions

The incorporation of mobility solutions into the neighborhood concept would offer tenants considerable added value. E-mobility may be a somewhat marginalized subject at the present time, but its importance is set to grow. It is the government's objective to increase the penetration of electric mobility and to promote it to such a stage that the number of electric cars in Germany reaches 1 million by 2020 and as many as 6 million by 2030.[4] These are undoubtedly ambitious goals, but it is important to discuss what can be done to achieve them.

It would be easy to provide the necessary charging point infrastructure within the neighborhood to enable interested tenants to make use of e-mobility options. The housing association would need to sign a contract with appropriate providers to install one or several charging points on semipublic land within the estate. Preparations could even be made today for a future centrally located charging plaza by installing empty conduits or cables at the same time as the heating pipes were being renewed.

A fixed electric car sharing point is a good way of allowing tenants to test electric cars and protect the environment at the same time. In order to install and operate a fixed car sharing point, the company would need to sign an agreement with a car sharing provider, who would then provide electric vehicles for the tenants to use. Operating a fixed car sharing model with electric vehicles could achieve annual CO_2 savings of around 10 tons per vehicle.

A fixed electric bike sharing point would be another alternative electromobility solution, which would also target a broader range of tenants. Like the car sharing option, there would be a contract between the housing association and a provider for the installation and operation of an electric bike sharing model. The cost would be refinanced through the rental price (2–3 EUR/h) for the vehicles. Both sharing models could be initiated as a pilot project and scaled up as required.

Submetering services

Submetering is an area where digital technologies can be particularly well employed. What submetering involves is taking meter readings to measure the consumption of heating and hot and cold water in the apartments. Cutting-edge metering technologies were also examined as part of the energy-efficient neighborhood concept.

Keeping the same metering technologies that are already installed in the apartments represents the lowest-cost option, but this is not recommended from a long-term perspective. The meter reading process and the transparency of the resulting data is less good with conventional meters than it is with radio operated devices. Advances in digitalization make it highly likely that radio metering devices

Digital and connected meters offer new opportunities within neighborhood management.

which report readings autonomously and transmit them via the internet will become standard in this area.

Retrofitting the existing meters to work with radio technology would simplify the meter reading process and create the basis for rapid data capture and easy management of energy data. For an energy management system to be successfully established, the metering devices need to be capable of providing extensive data on energy consumption, energy production and quality of energy. Good interconnectivity of the devices is necessary for controlling the different components.[5] With an energy management system in place, a reduction in annual energy consumption can be achieved. Modifying the metering devices to work as radio meters is the necessary basis for implementing an energy management system of this kind.

Summary

With the smart city approach as a general blueprint, each component of the solutions examined above makes a contribution to a sustainable energy concept. The outlined technical solutions can be implemented within different potential configurations of the neighborhood concept. Even if the estate was still connected to the conventional district heating grid but innovative solutions were applied such as photovoltaics-based direct electricity supply to the tenants or an e-mobility solution within a fixed car sharing model, the total annual CO_2 savings could amount to as much as 2,400 tons. 42% of this annual CO_2 saving would come from the modernization of technical systems and heating pipes. Offering tenants solar-powered direct electricity supply would cut total CO_2 emissions by 24% and the renovation of the existing buildings would reduce it by a further 33%. Electromobility in the form of electric car sharing would offer a 1% saving of annual CO_2 emissions in its present dimension as a pilot project for the tenants. The renovation of the buildings and modernization of the heating pipe network also offers considerable potential to improve heat consumption across the neighborhood. Total heat consumption, which currently averages approx. 16,700 MWh per year, can be reduced by about 27% through renovation and modernization measures alone. Further savings potential could result depending on the technology used to generate the heating power.

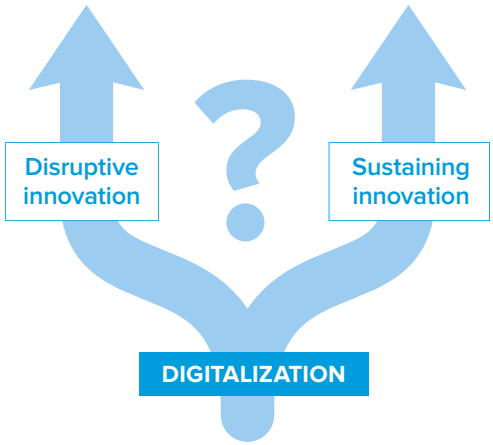
1 See Etezadzadeh (2015), p. 45 ff.
2 See Senatsverwaltung für Stadtentwicklung und Umwelt (2015), p. 3 ff.
3 See Hoppe (2015), p. 10 f.
4 See Lorkowski (2013), p. 116.
5 See Lorkowski (2013), p. 116.

Literature:

Etezadzadeh, C. (2015): Smart City – Stadt der Zukunft? Die Smart City 2.0 als lebenswerte Stadt. Wiesbaden: Springer.
Hessel, V. (2008): Energiemanagement. Erlangen: Publicis Publishing.
Hoppe, K. (2015): Der Smart City-Ansatz – Chancen und Herausforderungen für Städte und Gemeinden. www.bundesverband-smart-city.de/ow_user-files/plugins/forum/attachment_171_563c922fd81ee_563c9224962ec_Smart-Cities-Informationspapier_Klima_B%C3%BCndnis.pdf (07.10.2016).
Lorkowski, J. (2013): Öffentliche Ladeinfrastruktur für Elektrofahrzeuge – Kritischer Erfolgsfaktor oder überflüssiges Beiwerk? In: Boesch, K./Franz, O./Fest, C./Gaul, A.: Berliner Handbuch zur Elektromobilität. München: Verlag C. H. Beck. p. 115-136.
Senatsverwaltung für Stadtentwicklung und Umwelt (2015): Smart City-Strategie Berlin. www.berlin-partner.de/fileadmin/user_upload/01_chefredaktion/02_pdf/02_navi/21/Strategie_Smart_City_Berlin.pdf (October 7, 2016).

Which Way?

Building Digitalization Teams Right – Goals and Success Factors



In an era when increasing numbers of companies are making their organizations fit for digitalization, we are seeing more and more digitalization teams being installed. Read on to find out what companies need to take into account.

Chief Digital Officer, Head of Digitalization, Digitalization Team or more imaginative titles like Digital Guru – no matter what they are called, people are filling the digitalization roles in companies the length and breadth of industry. The real estate sector in particular, which for a long time was reluctant to embrace digitalization, is now happily taking the issue seriously and creating positions and teams to push the topic. The housing industry still lags somewhat behind the commercial and retail sectors, but is now also venturing deeper into the digital realm.

So it seems a good time to take a moment to think about the best way to build up a digitalization team. After all, while one can and indeed should rely to some extent upon practical experience in the field, there are also studies, books and many other sources of secondary information on the subject. Yet these sources of information point in two very different directions. In order to make sense of all the advice, it is important to consider the objectives that the digitalization team will be expected to achieve.

The digitalization team's goals

Essentially, the objective you are striving to achieve is the starting point for thinking about exactly what you need a digitalization team for. There are of course many differing objectives, but they all basically follow one of two main trains of thought: either you want to digitalize to improve existing structures and processes, or you want to develop new digital solutions and products. As objectives go, the two could hardly be more different. In the former case, the team has to work around internal structures, get people excited about digitalization, know their own processes and also consider political factors within the company. In other words, the team's main task can be described as digital change management with the goal of improving the existing organization. In the latter case, the team needs to develop new solutions. It is not a question of changing or understanding existing structures. Indeed, that could even be a hindrance and might limit free thinking. Unhampered by the need to stick to any current structures or products, it is a matter of developing innovative solutions for markets and target groups that may just be emerging.

That said, improving existing processes can also be somewhat innovative. So it is important to clearly differentiate between the kind of *sustaining innovation* that constitutes an improvement and a *disruptive innovation* that denotes something brand new. A sustaining innovation concerns itself with existing technologies or processes. It makes tried-and-tested tools and practices more efficient without replacing them with something completely different. Disruptive innovation, on the other hand, aims to develop something completely new. Therein lies the difference between sustaining and disruptive innovation. You can read more on this subject in Clayton M. Christensen's management classic, "The Innovator's Dilemma".

To apply an analogy from the automotive industry, the continuous improvement of the internal combustion engine to reach new top speeds is a sustaining innovation.

If I had asked people what they wanted, they would have said faster horses.

Henry Ford

On the other hand, the development of a new method of propulsion like an electric motor constitutes a disruptive innovation.

When sustaining innovation is your goal

Most digitalization teams in the real estate and housing industry are there to improve internal processes. In an industry where many companies will have large numbers of employees hitting retirement in the coming years, it is only logical to want to become more efficient by applying digital solutions. Existing IT providers and startups are bringing many new approaches to market that can be used to speed up existing processes.

A specific example may help to better illustrate what we're talking about here. In every property, there will be damages that need to be repaired. These processes are known as minor repairs management or reactive maintenance. Digitalization offers a wide range of possibilities to improve these processes. Apps through which tenants can report damage are already well known in the market. But what some companies may not know is that chatbots offer another way to automate the recording of damage. However, the use of chatbots is predicated upon a detailed knowledge of the existing process. What a chatbot will normally do is handle the recording of the case. Consequently, there must be a defined method of recording cases so far, data from existing catalogues must be entered ready for use, there must be a functioning way to log the case in the ERP system and the nature of the damage needs to be examined to determine whether it is an emergency or not. These are just a few examples of what improving an existing process by means of digitalization can involve.

Indeed, a detailed knowledge of the process is necessary in order to be able to identify areas in which sustaining innovations make sense in the first place. After all, not every solution on the market is relevant or suits every process. It also helps if you know the people involved in the process – the ones who are going to be using the new solution. Approaching them, identifying any possible fears and resistance they may feel and overcoming them in a specific and targeted manner is one of the keys to success with sustaining innovations.

Implementing sustaining innovations to improve existing processes is not a new concept, nor is it something that came in with the era of digitalization. Ever since the advent of competition, good managers have been working to become better and more efficient and to gain competitive edge. Doing so is part of the core business of every functioning company and, as such, should be embedded in the organization.

Suitable practices include putting support functions on the task, having mixed teams working together in a task force, upgrading the existing organizational development, and so on. It can also be useful to link up with process advocates or department heads in order to generate ideas and understand which process components are in need of improvement. That is why a digitalization team tasked with achieving sustaining innovations must be part of the core organization.

When disruptive innovation is your goal

Disruptive innovation is a beast of a completely different nature. Being innovative in the sense of truly disruptive, according to the unanimous opinions espoused by the theory books and practitioners alike, is not something you can do within the framework of an existing organization. In other words, the many companies that are opening up satellite offices in Berlin, for example, to give them a way into the startup scene, have the right idea – assuming their aim is to create disruptive innovations in the office. There are many well researched reasons why this should be so:

Small teams and small organizations are much better at

reacting fast. The gold standard of product development today is called the lean startup methodology. How this can be transferred to the housing industry is something we have described for you on page 46. The lean startup methodology is applied by young companies the world over. It means that if a team wants to be innovative and develop new solutions, it must do so with the speed of a startup. This is simply not possible in large organizations with lengthy decision-making processes, where it can take months just to get an appointment with the CEO or other top management. Decisions need to be made then and there.

Corporate controlling is the very antithesis of innovative. Seeking to address a market that does not yet exist with an elaborate business plan detailing the future revenues and margins that the "innovation unit" is expected to achieve is an exercise in futility. The plan will never be met. In practice, this usually results in the team being frequently reorganized or even disbanded due to a lack of success as its goals remain unattained (and unattainable).

New markets are usually very small and therefore not attractive to large companies per se. For many, many years, the market for electric cars was tiny – and it still is, measured against the market for vehicles with conventional engines. Only a small company with a lean cost structure to match will see an attractive opportunity there.

Customers don't know what they want. But if you listen to your customers and get their feedback, as every good manager working in the non-disruptive sphere does, you will most certainly make improvements to the internal combustion engine, to stick with the automotive analogy. What you won't do, however, is think up a totally new drive system. Henry Ford put it in a nutshell when he famously said, "If I had asked people what they wanted, they would have said faster horses". The disruptive innovation team must therefore be unencumbered by the influence of existing customers. That's the only way they'll be able to think freely.

A company's ability to succeed in its current core business generally constitutes one of the reasons why it is not particularly innovative. All companies have processes – whether they are written down or not, processes (in the sense of workflows) always exist. A process that guides the actions of service providers in the area of facility management is probably not a suitable process to guide service providers seeking to implement a new app for tenants. This example in itself should make it clear that new things cannot simply be imposed on top of existing workflows.

For all of the reasons set out above, a unit tasked with disruptive innovation must be managed and set up like a separate company. It needs to be in a small organizational entity outside of the main organization, with its own profit responsibility, its own decision-making processes and its own strategic mission.

Summary

The specific goal of the digitalization team determines the correct organizational setup for that team. In practice, the goal of sustaining innovation is the most common, which is why it makes sense to build an internal team. But the fact that hardly any genuinely disruptive innovations have been sought in the real estate sector so far does not mean that disruption may not also be a relevant goal at times. Such a responsibility should not be assigned to the internal digitalization team but must be entrusted to a separate organizational entity that has as little as possible to do with the existing organization. It follows that if you wish to pursue both goals you will need two teams.

Photo: RITTERWALD

Dr. Mathias Hain

What's Next

Which Developments Will the Real Estate Industry Inevitably Face in the Coming Years?

An Outlook by Dr. Mathias Hain

Dear readers,

The articles you have just read provide, in my view, a good overview of the issues that have kept our industry busy in recent years and will continue to keep it on its toes. Digitalization as a whole is certainly a topic that has long been with us in its various forms and will remain of great relevance in the future. However, there are already other topics on the horizon that will concern us going forward. If we all sat around a table, I'm sure we would easily come up with 20–30 key issues that are going to have a massive impact on our industry. Blockchain is just one example: this is a technology that's still in its infancy. We can hardly imagine how it will ultimately change not only our industry, but probably the whole world, too. Nevertheless, let me pick out three topics that I perceive as crucial and that I think will transform our industry in the not too distant future:

New market players demand new expertise

When the term "PropTech" suddenly started cropping up everywhere at Expo Real, only a few people knew what and who was behind those startups offering innovative products for the real estate industry. Many PropTechs came into being as a result of the "customer pays" principle and rent control coming into force. Other startups focused on the smart home and on tenant communications. During this time, RITTERWALD was already working with various startup founders and keeping a close eye on the market. We knew that the startups would do something different than the big software and hardware companies. Their aim was to transfer innovations and thus enormous potential straight into the housing industry.

That some companies would fail along the way was a foreseeable consequence. However, this does not change the fact that the big technological innovations we're seeing today are coming from small, agile companies and not from established industry players. This not only increases the range of good solutions available to the real estate industry but also adds to the pressure on industry incumbents. Against this backdrop, I am very happy about our excellent network in the PropTech scene, which we have been able to build and intensify over the years.

Now is the time for industry incumbents to find efficient ways to collaborate with PropTechs. To facilitate this, structures in the real estate industry will need to be set up to deal with requests coming in from startups and similar technology providers and, of course, employees will have to have the matching skillset.

In parallel with this, internal company processes will need to be more transparent. IT solutions are always aimed at workflows, in other words processes, within a company. This means that knowing your company's processes in precise detail and understanding which IT components are used where is the crucial basis for the company to evolve in any targeted manner. On the one hand, processes need to be mapped in suitable software solutions, whereby you are actually documenting and standardizing them. And on

the other hand, you must enable the continuous development of processes and support employees through the process of change.

Changed customer relationships and a move toward Accommodation as a Service

A long-predicted move toward Accommodation as a Service is something I have noticed only marginally in the industry. Of course, student residences are now available in the premium category, but actual Accommodation as a Service, where new tenants move in by “plug and play”, so to speak, booking services such as internet, furniture, cleaning, etc. through their smartphone whenever they need them, is still a good way off if you look at the market as an undifferentiated whole. For the housing industry, however, I do see a trend pointing unmistakably in this direction, mostly fed by the desire to generate additional income from tenants.

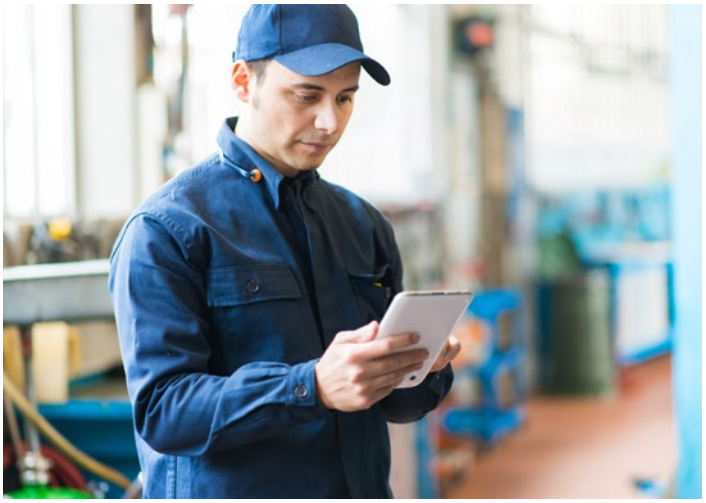
Customer relationships in the housing industry are changing. Where previously the maxim was that customer contact should actually be avoided because it gives rise to costs for processing the interaction, a new view of interacting with customers is emerging. Every interaction is a data point that enables the housing industry to know its customers better and present them with offers that effectively complement their customer experience as tenants. Customer interaction itself is also changing. Apps are coming onto the market and increasingly finding willing customers, and the technical infrastructure behind them is becoming ever more sophisticated. At the same time, the legal framework within which additional offers can be made to tenants is being explored.

Possibilities to sign up for direct electricity supply or internet contracts and so on as soon as tenants move in represent pioneering offers that are now becoming less and less exotic in our market. Other products will follow and will be ripe for marketing. Nowadays, marketing means interacting with tenants. I believe we are only seeing the tip of the iceberg here. Customer relationships will change and the industry will happily interact with tenants in the future, since every interaction offers the potential for additional income. At the same time, the costs of interaction will fall owing to the digitalization of internal processes and communication with the customer, with tenant portals and apps being key channels in the future.

Artificial intelligence and big data

Buzzwords they may be, but artificial intelligence (AI) and its close relation big data will pick up momentum noticeably in the coming years. Numerous AI solutions are already in use across the world today that seem almost unbelievable to us central Europeans. What is exciting for our industry is the question of how AI and big data can be used meaningfully. Through my many conversations with our clients, I have identified two key areas that I believe will be the main use cases for these technologies:

Predictive maintenance will be increasingly common. The recording of accurate data on the technical systems in a given building will enable an algorithm to identify which systems are going to need servicing when and which service providers will need to be notified. This will revolutionize fields such as supply chain management. It will lead to a significantly higher level of efficiency of management and service for tenants. If the data enables you to predict, for example, when the various items of equipment made by any given manufacturer are going to be suffering from wear and tear, you’ll be able to optimize both your purchasing and your maintenance processes. This is already happening for elevators today, and it will be extended to all parts of the building in the future. Maintenance providers will then have the right replacement part in their vehicle before the tenant even reports the issue.



Commonly occurring processes will be automated, especially as a result of interactions with customers. Tenant portals will be enhanced by the presence of chatbots, which can answer the tenants' most frequently asked questions. In the case of static inquiries with little complexity, their processing can even be automated without the help of big data and AI. One of the simplest examples involving no complexity whatsoever is a request for a proof-of-rent-payment certificate: all it takes is a reconciliation of balances on the tenant's rent account, which is easily automated without the use of big data. Big data and AI are now enabling this kind of automation to be extended into increasingly complex situations where decision making is still the domain of human beings today.

I hope you found our magazine an enlightening read and were able to draw some inspiration for your own company from one article or another. Inspiration thrives on communication and exchange, so if you have any fresh ideas to share or any issues that are really exercising your mind right now, please feel free to contact us – we'll be delighted to discuss the topics with you. We also welcome your questions, comments and suggestions on any of our articles, as this will only add to the insight of all of us. On that note, I look forward to sharing ideas and, of course, continuing to work with you.

Sincerely


Join at
slido.com
#EDG

Learning is like rowing against the current. Once you stop, you drift back.

Benjamin Britten

Technological possibilities are evolving rapidly, which is why it is especially important for a consulting company like RITTERWALD to be a learning organization. We like to share our knowledge – with our clients and our partners, who are keen to move the real estate industry forward with us.

In this context, we regularly organize symposia and workshops for people from our field of work. If you would like to join us at one of them, simply send an e-mail to info@ritterwald.de.

Roman Riebow, Head of IT at Gewobag, at a digitalization workshop hosted by the European Digitization Group, a digitalization task force co-initiated by RITTERWALD.

RITTERWALD

We are your partners
for sustaining and disruptive innovation.

www.ritterwald.de