

# IRS AKTUELL

Newsletter for Research on Society and Space



## Working Lives of the Future

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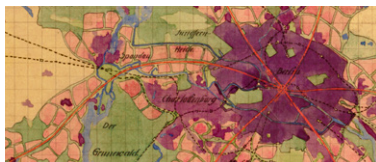
► Digital technology: a remedy for rural decline?



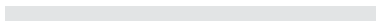
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# Spatial and social-science perspectives on work

Change is the central hallmark of the world of work. There is hardly a generation that has not experienced upheavals in the ways in which they work – from the introduction of the assembly line to the introduction of paid parental leave for employees. That the Federal Ministry of Education and Research (BMBF) designated the title “Working Lives of the Future” for Science Year 2018 testifies to a phase of accelerated change and the many open questions about work of the future. The Leibniz Institute for Research on Space and Society isn't a classical labour-research institute – so why an issue of “IRS aktuell” on the Science Year? You'll find the answer in the following pages.

Work is one of the central mechanisms of organisation in our society. The agreement to divide the accomplishment of essential tasks of coexistence, and to develop ever more complex principles of exchange and payment on this basis, first made many things possible that are taken for granted today: the specialisation of certain activities, leading to a turn away from the principle of subsistence, and thus to the formation of cities, in which each of us earns our livelihood rather than generating it ourselves. A connection can be made to the present day, in which work is the central social construct around which people orient their daily routines and their lives, and which forms the foundation of all economic cycles. From this point of view, it becomes clear what bearing research at the IRS has to the topic of work: questions of how cooperation between people is spatially organised, what potential certain configurations of cooperation have for innovation and creativity in organisations, or how migration movements or socio-spatial disparities directly connect to work demonstrate the high level of interdependence between aspects of work and socio-spatial transformation.

Research at the IRS thus converges with various points around the topic of Science Year 2018. Being investigated in the department “Dynamics of Economic Spaces”, for example, is the way in which circulation of knowledge is changing globally, leading to the emergence both of new digital means of communication (and thus the possibilities for exchanges of knowledge, innovation, and economic processes), but also new places of work, such as coworking spaces or labs (see page 4).

At the same time, researchers are investigating what effects such forms of organisation as seed accelerators are having on the start-up scene, or how organisations are able to provide targeted support or direction to creativity (see page 20).

On the other hand, the research department “Dynamics of Communication, Knowledge and Spatial Development” focuses on marginalised rural spaces: together with Dr. Mareike Meyn (Andreas Hermes Akademie), head of the department Prof. Dr. Gabriela Christmann speaks in an interview about the chances that digitalisation might offer to structurally weak rural areas affected by labour emigration (see page 9).

In the research department “Regeneration of Cities and Towns” projects have recently been completed in which long-term data on the economic structure, labour markets, and internal migration within the European Union is evaluated (see page 16).

Finally, research and a work-shadowing placement in a planning office by a doctoral researcher has provided insights into the changing world of spatial and urban-planning work historically and today (see page 24). ■





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## What we mean when we talk about "work"

In industrialised societies there is a traditional picture of what is considered normal for "work": a regular income, fixed working hours, promotion within a company, a well-deserved retirement as the long-term goal of any career, the fixed allocation of roles of employer and employee, and a clear spatial and temporal division between work and leisure. This relic from times shaped by industrialisation is so manifest in people's minds that it has even long existed beyond work on the assembly line or in factories, and is used to this day as the "normal" standard against which new forms of work are measured and on which social-security systems are based. In practice, however, the picture has begun to crumble in many places: start-up scenes, globally networked project work, or work as self-realisation are catchwords demonstrating that the world of work is currently undergoing lasting change. In the IRS research department "The Dynamics of Economic Spaces", new workplaces such as labs or coworking spaces, novel organisational and working processes, and creativity and insecurity are several aspects of this change providing the objects of socio-spatial research.





Instead of a necessary evil compensated for by reasonable pay, many workers today view their activity as a meaningful form of self-realisation.



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When the Federal Ministry of Education and Research chose "Working Lives of the Future" as the title for Science Year 2018, the plural form was well chosen. Although changes in work concern large, overarching developments of high relevance to nearly all areas of work, from the digitalisation of multiple production processes to services, consultation, or management, "working life" has become markedly more pluralistic than the singular form can convey. The variations affect not only the professionally contingent daily work routine – the shift patterns of nurses significantly differ to those of teachers, for example – but touch upon fundamental issues of the organisation of work, places, and times, as well as issues of expectations, perspectives, and security connected to work. The parallel existence of shift and project work, of home office and time cards, of the low-income sector and a civil-service career, or of self-realisation and work as a "necessary evil" are essential hallmarks of working lives in transition.

Comprising part of the change are several processes that in their interaction place the dominance of traditional work models in questions. Researchers in the IRS department "Dynamics of Economic Spaces" have been closely investigating several of these processes. They have identified, first of all, a substantial shift in the organisation of work, visible in the increase in freelance activity, project-based work arrangements, mobile and teleworking, and globally networked cooperations. This has an enormous impact on "collaboration" in the classical sense, as it is no longer attached to the need for the simultaneous presence of participants in one place. It also has implications for issues of social security, though, and not only because systems in place function differently for freelance workers and staff employees or public officials, but also because switching between these systems is not provided for and therefore involves considerable disadvantages.

Organisational transition brings with it changes in the spatiality of work, through cross-locational collaborations and working relationships, as well as through new places of work with specific local qualities. Significantly, work is no longer viewed as a mere partnership of convenience between employer and employee: instead of a necessary evil compensated for by reasonable pay, many workers today view their activity as a meaningful form of self-realisation. It is no longer only monetary reward that is expected, but also symbolic gratification, that is, the accomplishment of the work as a meaningful experience or as a contribution in improving social coexistence.

These transformations have important spatio-temporal components, as highlights the head of department Prof. Dr. Oliver Ibert. With his researchers, he has for many years been investigating the issue of altered spatiality through globalised exchange of knowledge. Digital communication infrastructures have made it possible for communities of practice and knowledge to form without physical spatial proximity, for instance in the area of online gaming. Concrete locations have not, however, become obsolete, but have rather greatly altered in their function and use, says Ibert. One need only think of LAN events for the computer-game industry. In his department's current lead project, researchers thus speak of "locally anchored, translocal communities of knowledge".

What is true in general for exchange of knowledge is naturally of central importance for working processes of all kinds: one has long become used to cooperating on a daily basis, partly in physical, partly in virtual proximity with others, and both forms of co-presence permeate and overlap with one another. In classical production, too, many processes are increasingly translocal, such as when data from the production line of a car factory is transmitted online for quality control. Open Creative Labs, which have been particularly intensively researched by the department, indicate that concrete places facilitate the digital circulation of knowledge as local anchors. They offer concrete social embedding and material facilities for the

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Photo: pixabay.com

exercising of a practice. Without this there would be no knowledge at all for actors to exchange over distance. At the same time, Open Creative Labs enrich these practices, in that they offer other fields of activity a home and thus open up opportunities for otherwise separate practices to observe and inspire one another, says Ibert. The physical co-presence at attractively designed places offers the variety and friction that is often necessary for creative or innovative working processes.

A second overarching finding of the researchers was that workers' conceptual, temporal, and spatial separation between leisure and work is increasingly dissolving – work and career are being in a variety of ways blurred. The fluidity of the boundaries means, for example, that leisure is spilling over into work – symbolised by the table-football and table-tennis sets and sofas in the working spaces of many start-ups – and, conversely, work impinges upon leisure time when, for instance one checks e-mail "after hours", works a home-office day, or writes up a strategy paper not in the office between nine and five, but rather at one's writing desk at home in the evening.

The dissolving of boundaries between work and career also stands in tension with the still influential urban-planning ideals and concepts of urban land-use planning, which took root, together with the traditional picture of work, during the heyday of industrialisation: motivated by industrial emissions and acute lack of space in the inner cities, a thorough separation between housing and places of work was established in cities and towns during the modern era, moored as the dominant guiding principle of urban planning by the Athens Charter of 1933. The present transition in working life runs partly in opposition to this orientation, as the local anchors of translocal knowledge communities – whether a lab or a web agency – find themselves again predominantly in mixed-usage inner-city neighbourhoods. The local environment of places of work becomes again important as a result of the close intertwining of leisure and work. Many of these overarching developments are visible in Berlin and Brandenburg, too. On 27 June 2018, in the context of Science Year 2018, the IRS hosted the Brandenburg Regional Dialogue at which representatives from politics, economy, and society jointly discussed what implications this transition has for the region. In particular, the conflicting lines of development of metropolitan Berlin and peripheral Brandenburg was a topic presenting not inconsiderable challenges for policy. Together with around 30 participants, Prof. Dr. Oliver Ibert and Prof. Dr. Suntje Schmidt discussed these issues under the moderation of Dr. Verena Brinks (all IRS), with Daniel Prorep of Brandenburg Invest (WFBB), Rudolf Lange from the Employment Agency in Frankfurt (Oder), Prof. Dr. Rolf Kuhn, chairman of the IBA Study Centre Lausitzer Seenland e.V. and former director of the International Building Exhibition (IBA) at Fürst Pückler Land GmbH, and Karl Täuscher of the University of Bayreuth.

During the discussions it became clear that the overarching aspects of the transitions in working life coincide with the specific challenges of continuing regional structural change in the Berlin/Brandenburg Metropolitan Region. In his contribution on the transformation of the Lusatian lakeland area, Prof. Kuhn emphasised that it would be essential to take early and sustained account of viable local and regional specifics of the structural change and their associated opportunities for design and competitiveness. Approaches that 15 years ago were discredited as "crazy", such as the development of floating houses on the newly appeared lakes of the leftover lignite-mining landscape, are today revealing their economic and thus also their labour-market policy potential. Daniel Prorep adds that while digitalisation is indeed fully underway in Brandenburg, he could not give any confirmation to the theory of "digitalisation as job killer". Prorep referred to the report, hot off the press from WFBB,





► **Work 4.0 in Brandenburg.** In his statement, Karl Täuscher also emphasised the downside of digitalisation, that the pay for long-term job positions is distributed highly unevenly, with a few superstars skimming off a large part of the reward for themselves.

The experts were in agreement that digitalisation has increased both the knowledge-intensive and the social and communicative demands on individual employees. This was the assessment of Rudolf Lange, who referred to the monitoring of employment agencies. He has increasingly had the experience, at the Employment Agency in Frankfurt (Oder), that lifelong learning is a basic prerequisite both for understanding technological digital procedures, and for maintaining intercultural and social skills in the long term. Prof. Schmidt followed on from this in his contribution. It is all the more important, he says, given the shift on the part of policy towards

holding in store more spaces, opportunities, and structures for lifelong learning and for dynamic change in employment biographies. Rudolf Lange describes the application situation in many parts of Brandenburg as alarming, with increasingly more vacant positions unable to be filled. Young people, says Lange, were suffering increasingly from high levels of disorientation. He sees as a central task the more targeted promotion of early-career orientation for young people.

Finally, the statements expressed with increasing clarity the high importance of the public handling of and attitude towards structural change in the future. Prof. Ibert called for structural transition not to be assessed only by today's standards, but to be understood over the course of time as a means of identifying specific new opportunities and developments becoming discernable only in the course of the transition process itself. As an example, Ibert named coworking spaces and labs that, in contrast to the situation today, could have played no structural-policy role 15 years ago. "In this sense, lifelong learning pertains to the adaptability not only of individuals, but also of regions", he said in his closing remarks.

So, how does this new picture of work look? The research of the department and the current discussions show that much has changed: we work differently, with different motives, different technologies, and in different places. But things aren't changing for everyone in the same way, and the changes offer chances and risks for various segments of the population and various regions. Even in 2018, work is not simply self-fulfilment, but rather provides one's livelihood. It forms, without question, the backbone of the economy. Even in globalised working processes, local moorings and regional interests are important. Thus it is once again confirmed: one couldn't be more correct than to speak of "working lives" in the plural. ■

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# Digital technology: a remedy for rural decline?

Young and highly educated individuals in particular tend to move out of the countryside to find secure employment with good career prospects elsewhere. This rural exodus, however, has far-reaching consequences. As people move out of villages, demand for local amenities and public services declines, and fewer individuals get involved in local affairs. An underused and thus often poorly maintained infrastructure and a negative discourse regarding the rural realm then tends to create an almost irreversible downward spiral of rural decline. Hopes have been expressed that the rural realm could, meanwhile, transition into the digital age and thereby break out this vicious circle. It has been suggested that a village with broadband internet access could even be on par with a lab in a major city when it comes to certain lines of work. We talked to Mareike Meyn, an expert on rural dialogue with the Andreas Hermes Academy, and to Prof. Dr. Gabriela Christmann, who heads the IRS research department on „Dynamics of Communication, Knowledge and Spatial Development," about whether such ideas are realistic or just wishful thinking, and what change digital technology could bring to the rural realm.

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Mrs Meyn and Mrs Christmann, what are typical problems that structurally weak rural regions face today?

**Meyn:** First of all, I need to stress that labelling to a region as „structurally weak“ already sends a negative signal. It is true, however, that certain rural regions in Germany have a difficult economic situation and poor infrastructure. This applies especially to public transportation and the provision of basic services. But one should not only focus on the deficits of rural regions. Of course there are structurally weak regions in Germany, and something must be done to help them. But I think there is not enough public support for these regions, and especially support that does not romanticise the rural realm.

**Christmann:** I agree. Yet the main problems are low economic productivity, a lack of educational opportunities and poor career prospects. Individuals living in structurally weak rural areas are particularly affected by a lack of local amenities and very limited public transportation. Consequently, many people feel that living in the countryside will not let them get ahead in life. This leads to young and middle-aged people moving to urban centres. Which in turn means rural areas are increasingly inhabited by the old who stay behind. This, in turn, poses a challenge for local health care and nursing services.

The rural exodus appears to be a core problem that is linked to various other challenges. To what extent do job opportunities determine whether people decide to pack up and move away?

**Christmann:** A lack of jobs is a major problem for those living in rural regions. Surveys tell us that individuals do appreciate the rural life and would remain there and put up with certain disadvantage if the local job market were more promising. And statistics show that young people with degrees or those in education, as well as the middle-aged, tend to move away. It is safe to assume they do so because of the lack of educational opportunities and jobs. But the exodus of well-educated individuals exacerbates the problems that structurally weak regions face as local or regional companies have an even harder time recruiting qualified staff. Small, regional companies then find it particularly difficult to foster innovation and compete against enterprises elsewhere. Moreover, well-educated individuals often tend to support social causes. So when they move away, there is less civil society activism to hatch novel ideas which could help tackle rural challenges.

**Meyn:** The labour market has always been a crucial factor in determining where people choose to live. However, many rural residents simply do not want to move away, and a growing number of urban dwellers are dreaming of living in the countryside. In addition, many „hidden champions“ are based in rural Germany who hope to recruit qualified staff. But people need to be satisfied not only with their job but also with the area they live in. They will want to know whether there is a village shop, if their children can attend the local school, and what options there are for spending one's free time. Those are just some of the factors that influence where people decide to live.





Photo: Chayanin Wongpracha/shutterstock.com

It seems to be like a chicken and egg dilemma: there are few jobs for well-educated individuals, but companies are also desperate to recruit highly skilled employees. What can be done to break this vicious circle?

**Christmann:** There are various potential remedies. Schools and companies could create close, long-term partnerships with the aim of fostering mutual understanding and overcoming prejudices. That way companies could recruit prospective trainees as they are about to finish school. Companies can also make their apprenticeships more attractive to applicants, for instance by sending trainees to partner companies abroad. Attracting qualified staff not only entails increasing the pay but also offering modern, flexible working-hours, maintaining a positive work environment, and allowing for a good work-life balance.

**Meyn:** Education and advanced vocational training are crucial I believe. To this end, companies and schools need to cooperate, and opportunities for advanced training need to be provided within and outside of the workplace. Public relations efforts are of central importance, also. Regions need to cast themselves in a positive light, highlight their strengths and promote local employers. Only then

will prospective employees consider moving there. There are plenty of examples of such efforts. Like the „Allgäu Job Challenge“ PR campaign, where a blogger spent half a year trying out 30 different jobs in southern Bavaria and then writing about her experience. It is important to put lesser known regions on the map, so to speak. The US „Silicon Prairie News“ website, for instance, helps raise the profile of lesser known innovative tech communities in rural Nebraska, Iowa, Missouri and Kansas. It is important that information about such regions be made available online. Otherwise, in this day and age, people may not even realise these places exists.

Digital technologies are rapidly transforming the workplace. Could they also help halt and reverse the decline of structurally weak rural regions? Which concrete advantages do they offer?

**Christmann:** Today, agriculture is remarkably high-tech. One aspect of this broader trend is the use of digital technologies in the context of cattle farming, for example. Technology changes how farmers work and can make agriculture more efficient. And farmers can share insights with and learn from a global agri-tech community. Digital technologies also allow for the emergence of new distribution channels for products made in structurally weak rural regions. That way, for example, a rural farm shop can sell exquisite goats cheese with herbs throughout the entire country and thereby stay in business. Digital technologies also allow individuals to live in the countryside, yet work for employers elsewhere. After all, many office jobs can be partially be done from home.



Photo: pixabay.com, #Landr Rebellen: Andreas Hermes Akademie

**Meyn:** Digitalisation decouples time and space, and can create a more equal playing field. If a village has high-speed broadband internet access, this gives it a relative advantage over other regions and possibly even cities. And the countryside offers much that city dwellers sorely miss: fresh air, space and nature, to name just a few things. Which, incidentally, are conducive to hatching creative ideas. Which could put a rural twist on the business model of shared offices, better known as „co-working spaces“. What matters is that people are made aware of the opportunities that digital technologies can offer. And that, as a rule, only those technologies or applications are utilised for which there is an actual need. The Andreas Hermes Academy and Fraunhofer Center for Responsible Research and Innovation got together with rural residents to reflect on and imagine how digital technologies may some day transform rural life. They developed three visionary yet simultaneously realistic models of what such a future might look like. One model envisions a fully networked village, another centres on the dynamism of rural regions and how static elements could become mobile, thus blurring the boundaries between the rural and urban. A third model envisions new ways of tapping into and unlocking rural potentials by creating a „ministry for endogenous potentials.“

Why is it so difficult to unlock all these potentials?

What is preventing the use of digital technologies in rural areas?

**Christmann:** There are numerous reasons for this. And the lack of broadband internet access is merely the tip of the iceberg. Companies, for example, are uncertain about whether or not to use IT applications and high-tech security features. This uncertainty is made worse by elaborate data privacy and copyright laws. And rural residents are not always very receptive to using digital technologies

**Meyn:** The necessary infrastructure needs to be built, of course. Without high-speed internet access, rural living conditions will never match those in urban areas. Unfortunately, rural areas are lagging behind when it comes to digital technologies today. But the German government has declared it wants to change this. It will be important not to limit these efforts to installing broadband internet access alone. Resources that are already available today must be tapped into to bring rural regions into the digital age. Already today, villages could offer free public wi-fi now that wi-fi operators are now longer liable for users' copyright infringements. The digitalisation of the rural realm must also be accompanied by a change in peoples' mentality, but that will take time. It will mean radically rethinking many aspects of life and how digital technologies might be applied to them. Bringing the rural realm into the digital age will require new ways of sharing accountability and responsibility, and of structuring space. In Germany, however, a silo mentality and compartmentalised accountability are common, which is incompatible with the networked, digital age. It will be important to make clever use of the freedoms provided by digital technologies, though this will require a certain level of know-how. People need to learn about the opportunities offered by digital technologies, such as what kind of advantages blockchain technology offers companies. Or how to utilise digital tools to educate schoolchildren in a peripheral village about the vast, interconnected world out there. Of course, everybody will have individual questions of their own. Trained moderators with an awareness for locals' various needs will be required to help kick-start the digitisation of the rural realm.



But the use digital technologies in the workplace seems to be largely confined to the urban realm. Why is that?

**Meyn:** ecentrality is one defining characteristic of the digital age. Today, one can communicate in real-time across the globe. Already today, for example, digital nomads appreciate working in the idyllic Brandenburg countryside. But certain conditions need to be met for creative jobs like these to flourish. US economist Richard Florida argues that a combination of talented individuals, technological prowess and a tolerant environment is needed. Taken together, these factors increase human capital, strengthen a region's high-tech infrastructure and enhance the local quality of life. Regions hoping to cultivate such a creative economy depend on skilled workers who possess know-how and unique intellectual abilities. These days, however, talented individuals of this kind are highly sought after and can therefore pick and chose where to settle. Today, there is a global „war for talents,“ with workers and companies competing against each other on a worldwide scale. Companies need to attract talents, advertise jobs globally, and possibly even locate to where prospective employees are based. The available technological infrastructure is a key concern here. If no high-speed internet access is available, a region – even a Berlin neighbourhood – will be unattractive to talented workers and companies alike. Richard Florida's model stresses the importance of a tolerant environment, too. By this he means an openness towards alternative lifestyles, tolerance towards minorities, migrants, artists and so forth. Villages therefore need to ask themselves whether the local atmosphere is one of tolerance that welcomes new arrivals. When talent, tolerance and technology converge in the rural realm, creative digital jobs will no longer be confined to urban spaces.

**Christmann:** In my opinion, there are two reasons why such jobs are mainly found in cities. On the one hand, digital technologies are rapidly transforming knowledge-intensive jobs, in particular. And only cities boast a rich and diverse choice of educational institutions necessary for the knowledge economy to thrive. On the other hand, digitally interconnected knowledge workers tend to live urban lifestyles, drawing inspiration from the cultural diversity and internationalism of cities. Rural spaces do not offer this, either.

The digitisation of rural Germany is not gaining momentum, even though many promising approaches to stimulate this process exist. You could call rural Germany a digital wasteland. How are other countries faring?

**Christmann:** I would not refer to rural Germany as a digital wasteland. Even though the digitalisation of rural Germany could certainly be further along. I am sure Mrs Meyn can talk more about this.

**Meyn:** In international comparison, Germany still lags behind when it comes to ensuring broadband internet access across the entire country. When you look at individual German regions you realise that the availability of broadband internet varies by state and municipality. High-speed internet will be more readily available in urban areas. According to the latest government data, unlike most German cities, only 43 percent of Germany's countryside has access to 50Mbps broadband internet. That means Germany is below the EU average. Last year, I travelled to the US to see whether rural America is taking advantage of the opportunities afforded by digitalisation. But there, too, internet access is limited. There is a vast digital divide separating interconnected urban centres from rural regions which often lag far behind. Cuts to the federal budget for rural development have hampered the expansion of broadband internet access in the countryside. And the scrapping of net neutrality further compounds this situation.

A high-quality broadband internet infrastructure is one prerequisite for bringing the rural realm into the digital age. But digitalisation entails so much more, too. Roberto Gallardo of the Purdue Center for Regional Development, who used to work for the Mississippi State University Extension Service, told me that a strategy is needed to really tap into the opportunities afforded by digital technologies. The Extension Service is active in rural America, providing advice and assistance to farmers and in the context of village development. The Intelligent Community Institute, meanwhile, works to help Mississippi villages transition into the digital age. Helping rural residents understand the opportunities afforded by digital technologies and fostering a culture of dialogue is an important part of this process. These digitally savvy rural communities in Mississippi, the poorest state in the US, make one thing clear: digital empowerment not only requires a technological infrastructure, but most of all motivated and imaginative locals. This could serve as an example for rural development in Germany.

Digital technology is not an end in itself. Many potential applications of such technology present themselves. IRS researchers will soon study the interplay of digital and social innovation in rural settings. What examples are of this? And what role do digital technologies play in fostering innovation in economically deprived rural regions?

**Christmann:** It is clear that digital business models can also be developed in rural settings. And digital technology can help address specific rural challenges. But I would not argue that such technology is absolutely necessary for fostering innovation in structurally weak rural regions. Instead, whether regions can come up with innovations crucially depends on key actors, networks, creativity, know-how, skills and the courage to try something new.

**Meyn:** Yes, key actors and networks are indeed pivotal. These tend to be the drivers of novel processes and contribute to making regions more attractive to others. The #LandRebellen (which translates to „rural rebels“) campaign by Germany's Andreas Hermes Academy provides a platform for unconventional thinkers committed to rural innovation, and showcases rural dynamism. Digital technology has made it much easier for key actors to connect with each other, and has allowed networks to flourish and cooperate more effectively. Digitalisation fosters collaboration which is often conducive to innovation. New ideas are not just sparked through outside impulses, however. Novel ideas can also emerge when people are daring and have an opportunity to experiment. That is why I am a great fan of labs, which have now also sprung up in rural settings. They let people experiment with new ideas using 3D printers and laser cutters or through computer programming. The countryside, in particular, needs analogue spaces offering digital and other high-end technology, where people can share insights and collaborate. I believe that is very important.

What kind of political advice can be derived from these insights and experiences? What can be done to support and encourage rural Germany's transition into the digital age?

**Meyn:** Digitalisation allows for decentralisation. I mean, why do all universities, public institutions, organisations and companies have to be based in large cities? When rural spaces offer the same high-quality digital infrastructure as cities then, I believe, they could undergo a renaissance. Which could end the ongoing sociospatial polarisation.

**Christmann:** Bringing the rural realm into the digital age will not be simple. The state will need to invest in a future-proof infrastructure. And must provide assistance so that companies can take advantage of the opportunities afforded by digital technologies, yet will also be shielded from its risks. The „go-digital“ programme is one such support scheme. But the state must also invest in an efficient, digitalised public administration and properly regulate digital services such as telemedicine. ■



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# Knowledge economies, workforce mobility, and social cohesion in Europe

A close connection is known to exist between employment, mobility, and migration. The prospect of employment at a level suitable to one's level of education is an important stimulus for migration. On the other hand, it is not only people who pursue jobs. Companies, too, capitalise on local workforce reservoirs whenever they make decisions about a work site – indeed, this is particularly so in the area of highly qualified employment. The large-scale dynamic that can develop out of this connection has been experienced by many regions in eastern Germany since unification: following the economic upheavals there came job losses and emigration with important consequences for socio-spatial disparities. The most recently completed study, "The Geography of New Employment Dynamics in Europe", conducted within the framework of the European Spatial Planning Observation Network (ESPON), addresses the chances and risks for social cohesion in Europe that result from the developmental dynamic of the knowledge economy and the migration flows connected to it. The study focuses on the last fifteen years. Making use of qualitative sub-studies (scenarios, regional case studies, and policy analyses), it identifies perspectives of action for European regions.

Photo: ArTo/photolia.com





The study was conducted between May 2016 and November 2017 by the IRS research department "Regeneration of Cities and Towns" together with the Istituto per la Ricerca Sociale in Milan and the Institute for Employment Studies in Brighton. The research department brought its conceptual expertise on issues of migration, mobility, and socio-spatial development, and carried out two of the six regional case studies (for Berlin and Mecklenburg-Vorpommern). The extensive cartography was prepared by the cartographic department of the Technische Universität Berlin.

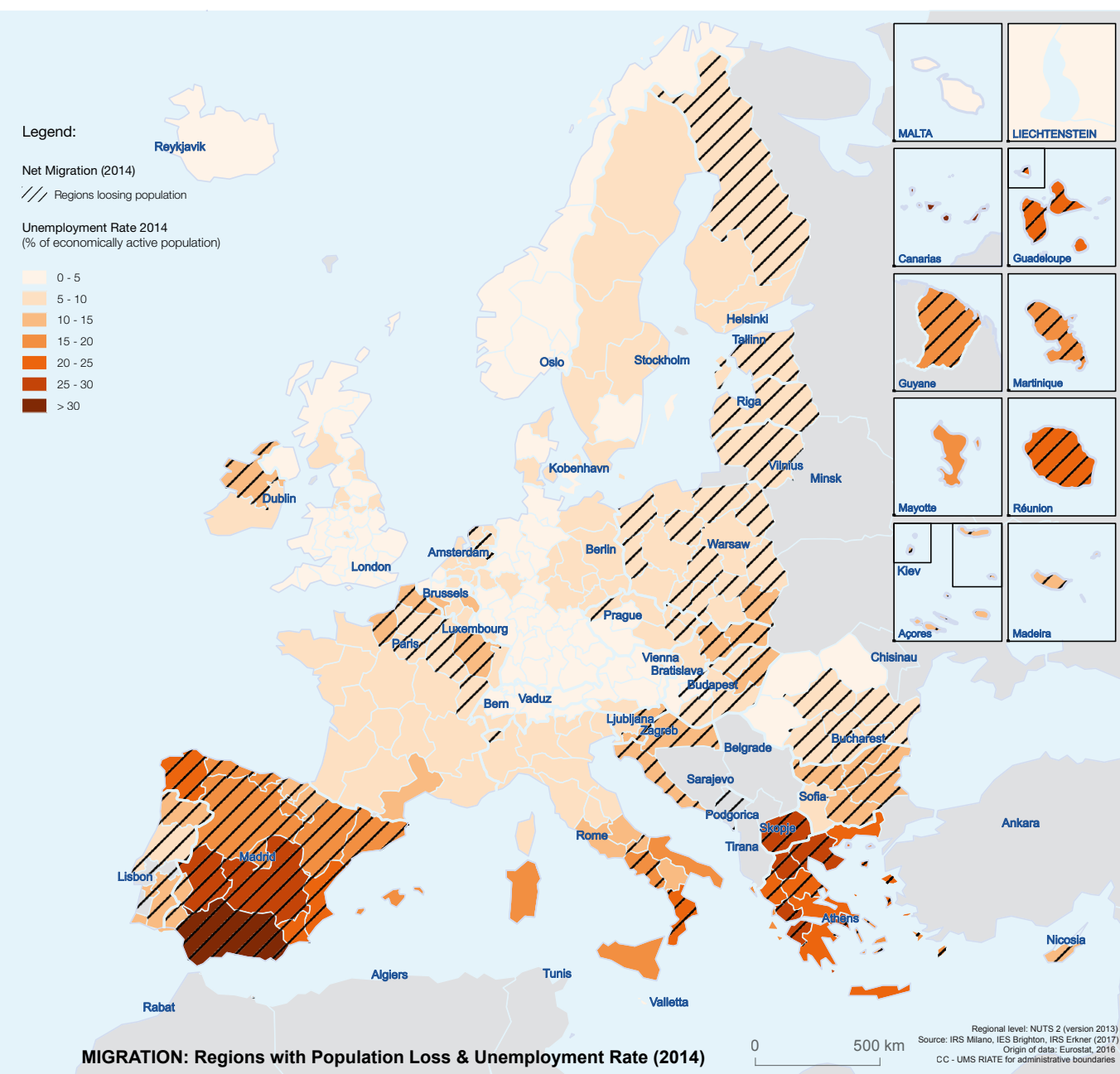
The basis of the study is a quantitative survey of the knowledge economy across the EU as a whole and at the level of the NUTS-2 regions (Nomenclature des unités territoriales statistiques). In Germany this level corresponds to the medium-sized and smaller federal states, including the city states, as well as sub-units of the larger federal states. The evaluation of the available quantitative indicators – such as the proportion of those with further education, the size of the research and development sectors, and endowment with research institutions and high-tech firms – clearly showed that the significance of the knowledge economy has increased throughout Europe in the last decade. Thus, in 2004, approximately 20% of EU citizens had completed higher education, while ten years later in 2014 this figure had already risen to 28%. Expenditure on research and development has likewise risen in almost all regions.

There is pronounced regional differentiation within the EU: the indicators for status and development of the knowledge economy (e.g. employment in knowledge-intensive branches) show a marked and increasing spatial concentration in, on the one hand, metropolitan regions and, on the other, in western and northern Europe. Rural regions as well as southern and eastern Europe are becoming increasingly left behind. This inequality is evident, too, in the migrations within Europe of well-educated, highly qualified younger people. While migration has increased in general, especially after EU expansion east and south-east in 2004 and 2007, both the quality and the relationship of regions with net inward and outward migration have changed. The high rates of unemployment among well-educated younger people in the wake of the 2008 financial crisis – an event that also presents itself as a watershed for other developments – contributed to a enormous rise in the proportion of highly qualified migrants. At the same time, between 2004 and 2014, there were 60 regions that developed from regions of net immigration to those of net emigration, but only eight with the opposite development.

By means of quantitative data analysis, the European regions were classified into four different competitive clusters. Accordingly, 39 regions are typified within a "highly competitive knowledge-economy based cluster", 160 regions belong in the middle range ("competitive with connections to the knowledge economy" or "less competitive with potential for the knowledge-economy"), while 83 regions were assigned to the cluster of those "less competitive with a very weak knowledge economy". The spatial distribution of these types, corresponding to the 282 regions, essentially corroborated this distributive pattern. Comparing chronologically, it was also noticeable that significantly more regions from 2004 and 2007 (before the financial crisis) and 2012 to 2015 (after the crisis) had to accept a deterioration in their position than were able to improve. The 41 regions that saw a relegation in their typification are primarily located in the Mediterranean region and in Great Britain. The 15 profiting regions, on the other hand, are mostly located in Germany.

One or two case studies per cluster were prepared, following the different strategies that had been discerned for growing their knowledge economies. Berlin, rated among those in the highly competitive cluster, succeeded in attracting countless new young, highly qualified people through a strategy of concentrating the local economy on the potential of the knowledge economy. Similarly to London, Berlin scored above all through an emphasis on the capital's existing urban diversity and its targeted expansion into a capital of knowledge and services. The strategy of the territorial state of Mecklenburg-Vorpommern, classified among the cluster "competitive with connections to the knowledge economy", was totally different. The regional strategy consisted of a strengthening of the health sector, as well as of an expansion of biotechnology research and development. In addition, the region profited from the universities located there. High levels of emigration and the over-ageing of the population can thus be counteracted – such high emigration as existed in the first 15 years following reunification is now in the past. In 2015 the state recorded an overall migration surplus of ten percent. The region combined its historical image as a place of recreation with its focus on the health sector, for example by upgrading its Baltic seaside resorts.

In order to make statements about future regional development in Europe with regard to the expansion of the knowledge economy, four scenarios were designed for discussion with experts on the ground. These scenarios embodied four different concepts of political, economic, and migration-related development in Europe. The experts considered the most likely



development model to by that of the “heat of 27 suns and one moon”, which predicts high, inclusive economic growth in the core regions of Europe and in parts of the periphery. Well-educated professionals are expected to have more difficulties bringing their abilities into peripheral regions. It is possible that these regions will be unable to sufficiently capitalise on the training of their own populations. High willingness to emigrate among the younger labour force is expected. The “moon” in this scenario relates to the currently planned exit from the EU of the United Kingdom, which will probably place a burden on the knowledge economy of London, because it will lead to large-scale emigration of highly qualified personnel. In this scenario the increasingly important role of diaspora communities for social cohesion is emphasised.

The overall view of the investigation's three different elements (current status, strategies, future development) presents considerable challenges for a pan-European policy of cohesion after 2020. The highly unequal distribution of the knowledge economy has the potential, through its relevance to migration decisions, to further exacerbate socio-spatial disparities in Europe. Highly qualified people in particular could emigrate in the coming years in even higher numbers from peripheral regions into those with stronger knowledge economies. ■



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## LINKS

- ▶ [leibniz-irs.de/forschung/projekte/projekt/the-geography-of-new-employment-dynamics-in-europe](https://leibniz-irs.de/forschung/projekte/projekt/the-geography-of-new-employment-dynamics-in-europe)
- ▶ [espon.eu/employment](https://espon.eu/employment)

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Felicitas Hillmann is head of the research department "Regeneration of Cities and Towns" and Professor of "Urban Transformation in International Perspective" at the Technische Universität Berlin. Her research is directed towards, among other things, international migration in the context of urban transformation. In 2016 and 2017 she was head of the IRS sub-project for the ESPON study "The Geography of New Employment Dynamics in Europe".



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## The future of work: creative start-ups or business as usual?

There are diametrically opposed ideas of what the future of work might entail. Will creative start-ups become the norm, or will most people still be doing routine work in open plan offices? Both ways of working come with a vastly different set of normative expectations. Companies, for example, appreciate clear work routines as this allows for quality management. Employees, in contrast, value a certain degree of freedom and creativity in the workplace, provided this does not produce serious risks or uncertainty. Founding companies and running start-ups is hard work, meanwhile, yet also entails the promise of innovation and brand new corporate cultures. We spoke to Lukas Vogelgsang and Andreas Kuebart, two doctoral researchers at the IRS research department on the „Dynamics of Economic Spaces.“ Their dissertations examine how creative and routine work flows can be reconciled in the workplace, and how seed accelerators are transforming the world of tech founders and start-ups.





Mr Vogelgsang and Mr Kuebart, could you briefly describe your respective doctoral theses?

**Vogelgsang:** I am conducting my doctoral research in the context of the „Governance of Creativity: Distributing Uncertainty in Collaboration Practices“ DFG research group, which is based at Freie Universität Berlin and the IRS. The scholars in this group investigate different ways of organising creativity. Creativity is not conceptualised purely as the mental processes of a brilliant mind, but also as the collaborative achievement of several individuals. My dissertation examines how routine and creativity can work together. At first glance, both appear like opposites, but I want to show that routines exist which can induce productive uncertainty and thereby create opportunities for creative endeavours.

**Kuebart:** My doctoral dissertation focuses on the geographies of entrepreneurship in the context of seed accelerators, which constitute a novel scheme for supporting start-ups. Seed accelerators require participating start-ups to grow their business under considerable time pressure, usually within a span of three months. To this end, investors provide ample resources, also allowing founders to earn a salary, which maximises their productivity. Some founders are critical of having to work under such pressure. But often, start-ups rapidly develop during this period. My research studies the role and importance of seed accelerators at the intersection of local and translocal processes.

In what sense do your doctoral dissertations tie into the theme of the 2018 Science Year 2018: „Working Life of the Future“?

**Kuebart:** My work relates to this theme on many levels. On the one hand, entrepreneurship is a unique form of work that has gained tremendous importance in various fields. Usually, small teams of founders get together to create and grow a start-up. Particularly in the beginning, this process requires a lot of hard work and dedication on part of the founders, who will only be able to pay themselves a modest salary during the first years, if at all. Yet founders will be hopeful that their start-up will grow and flourish so that all the hard work will eventually pay off. On the other hand, start-ups in the tech industry in particular tend to grow rapidly and start hiring staff fast. Many of them foster a unique corporate culture to set them apart from other more mainstream companies. Start-up staff, too, are often deeply invested in the business despite earning salaries below market rates. They often receive company shares in return, which increases their interest in start-up's long-term success. And studying seed accelerators, finally, provides deep insights into the immense time pressure that tech start-ups face

**Vogelgsang:** My research on the interplay of work routines and creativity connects to the theme in two regards. On the one hand, I want to analyse and understand how creative work is organised. Typically, companies – or their management – strive to establish standardised, routine work flows to limit organisational uncertainty. Yet several studies have shown that improvisation, accidents, failures and uncertainty can be conducive to creativity and innovation. You could say I am adopting the perspective of a company by studying how employees can be managed so that creativity can flourish. My dissertation argues that some routines do not reduce, but rather induce uncertainty. Which is why I propose the notion of open routines: these are comprised of repetitive patterns of interdependent actions, which can induce uncertainty and thereby make important contributions to organised creativity. Aside from this organisational dimension, I also want to learn how individuals break with routines and develop new approaches, and how such changes are incorporated into ongoing collaborative processes



Photos: pixabay.com

You are researching organisational issues of work at the IRS, an institution which has a strong spatial focus. In what sense does your research incorporate a spatial perspective?

**Kuebart:** Seed accelerators are based in a physical location, so adopting a spatial perspective makes sense. However, seed accelerators are also embedded in broader processes. So once you take a closer look at them, you find yourself analysing transnational processes. Highly specialised seed accelerator schemes bring together founders, mentors and coaches from all over the globe. Consequently, participating start-ups will find themselves temporarily or even permanently connected to the region where a seed accelerator is based. Which, in turn, gives rise to complex transnational geographies. Adopting a spatial perspective can help better understand the impact that a region has on the development of a business. For instance, what effect does the presence of other mentors and founders have on a company?

Social science-based spatial research also sheds light on the changing role of space in the context of the digital economy. Here, space is constituted through a complex interplay of local, regional and global networks

**Vogelgsang:** Questions of spatial proximity and distance, and of co-presence, play an important role regarding creative collaboration, too. Whether one works together in the same physical setting, or collaborates virtually, makes a big difference regarding the way creative work is organised and carried out on an individual level.

Looking to the future.  
What indications of how working life  
has changed and will change can you  
detect in your own research?

**Vogelgsang:** Creativity is currently undergoing a boom in business contexts and it is to be expected that this trend will intensify further. In particular, it will become ever more important how creativity is organised in highly complex processes such as in the pharmaceutical industry, a case study in my own dissertation. This area is technically demanding, highly profitable economically, and heavily regulated. It is not possible to work creatively as an individual in this context. Collaboration is thus imperative. A second exciting aspect of work in the future will certainly be the issue of what influence artificial intelligence has on creativity. For problem solving there already exist today impressive pilot projects with AI that will influence this creative process. That it will occur is a near certainty, in my view. The only question is, how?

**Kuebart:** The significance of start-ups for working life has increased dramatically in recent years. This is evident quantitatively on the one hand, with former start-ups (or "grown-ups") such as Zalando or Delivery Hero now employing thousands. In Berlin, in particular, the significance of smaller start-ups to the local labour market is also considerable. On the other hand, the new working cultures present in start-ups are increasingly having an effect on existing companies, who are adopting certain of their elements. Both trends are likely to continue for at least the mid-term.





Photo: pixabay.com

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Andreas Kuebart is a PhD student in the research department "Dynamics of Economic Spaces", in which he contributes to the lead project "Local Anchors of Translocal Knowledge Communities: New Focal Points of Knowledge Generation and their Territoriality". In his doctoral project he examines so-called "seed accelerators" and their role in the startup economy.

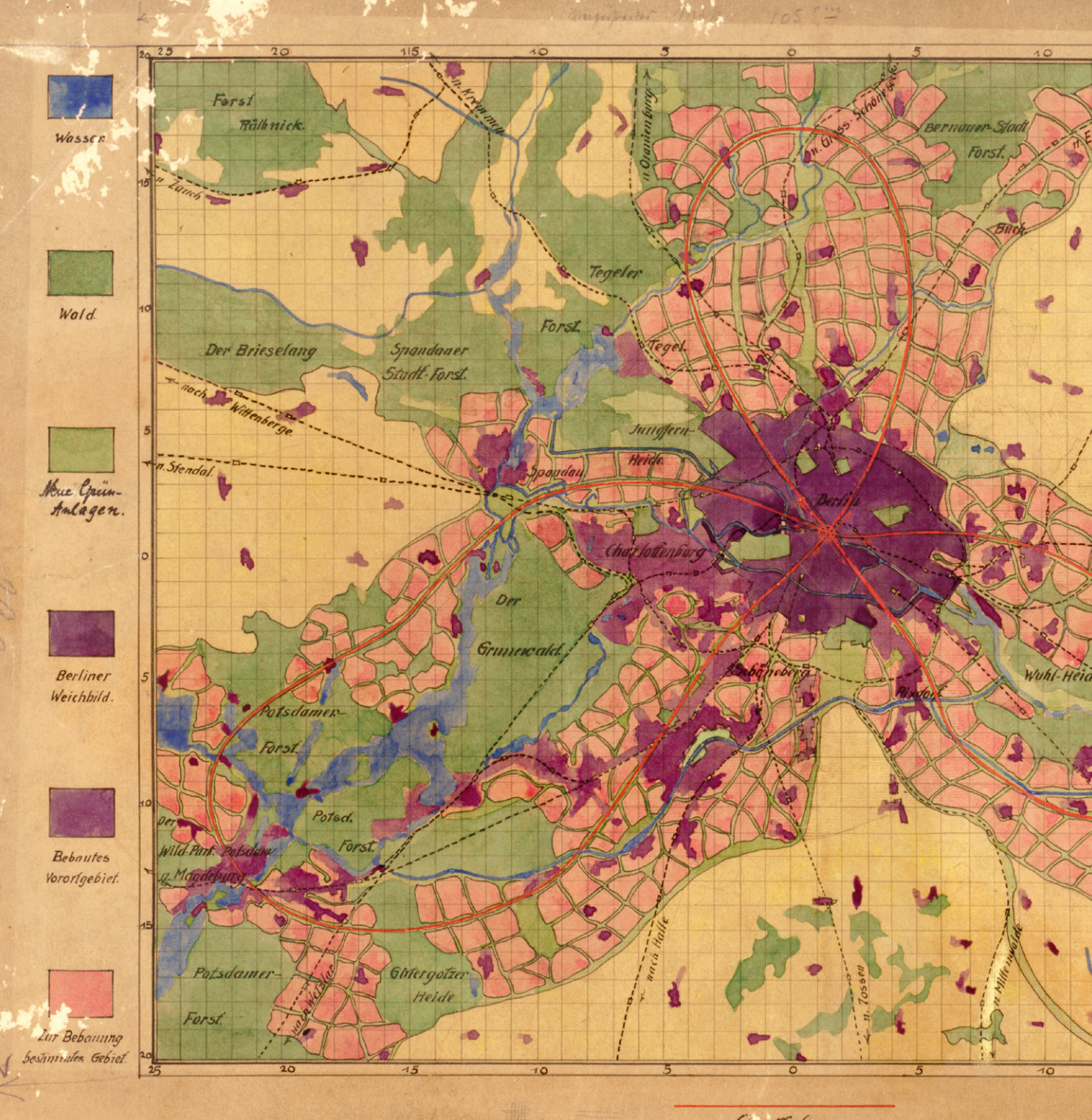


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Lukas Vogelgsang is a PhD student in the research department "Dynamics of Economic Spaces". He is completing his doctoral thesis within the framework of the DFG research group "Organized Creativity – Practices for Inducing and Coping with Uncertainty" (Spokesperson: Prof. Dr. Jörg Sydow, Freie Universität Berlin). The sub-project realised at the IRS by the research group and his doctoral thesis address the possibilities of management (e.g. through routines) by organisations with regard to uncertainty and creativity in working processes.





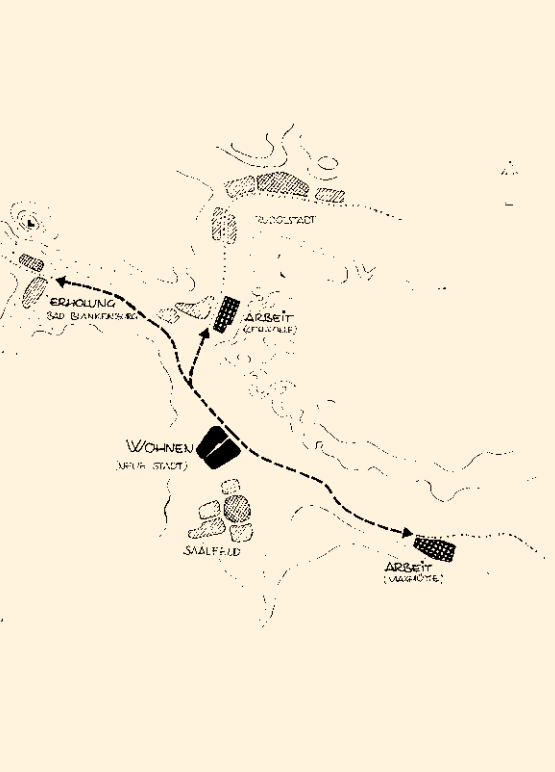


## Multifunctional service providers in a digitalised world: On the work of city planners yesterday and today

The great development trends in working life are well known and widely discussed: the digitalisation of work organisations, the pros and cons of automation, the constantly rising number of precarious, temporary working relationships. Nevertheless, the forms that these trends take in individual fields of work, and the implications they have for people, present themselves quite differently to, for instance, car mechanics and nursing staff. Within the framework of the research project "The Mediatisation of Urban Development Planning and Changes to the Public Sphere" (MedPlan), IRS doctoral student Kathrin Meißner examines the work of urban planners past and present, and through a shadowing placement at a planning office has won insights into the change occurring in their working lives.







In 1910 the highly regarded Public Urban-Development Exhibition (“Allgemeine Städtebau-Ausstellung”) took place in Berlin, a major urban-development competition for the design of the growing metropolis. The orientation of a competition towards the total urban area rather than individual assignments such as the design of a building or ensemble was a new phenomenon – and an expression of far-reaching development processes. With the industrialisation and fast-paced urbanisation of the 19th century came great development pressures on German cities and towns, with large-scale urban expansion requiring systematic development and coordination between industrial, residential, infrastructural, and transport development. This induced a professionalisation of urban development at German higher-education institutions. Following the first special urban-planning lectures, held by the civil engineer Reinhard Baumeister during the winter semester 1874/1875 at Karlsruhe Polytechnic, came the first postdoctoral qualification in urban development (1895 in Berlin) and, with this, early academic training institutions for planners in Berlin, Dresden, and Stuttgart. The Public Urban-Development Exhibition used the general term “planning” for the first time, consolidated the process of professionalisation for urban development, and established the city-wide plan as a medium for design and communication.

Around 100 years later, the academic career and the professionalisation of spatial planning is long established. Change in working life has nevertheless become a constant companion to planners, who have both developed new technological possibilities, such as high-quality reproduction or computer-aided design, and adapted their activities seismographically to the political and social developments of the 20th century. Historian of planning Kathrin Meißner accordingly identifies many dimensions in the working lives of planners. Her research and a shadowing placement at a Berlin planning office revealed fundamental changes in the organisation of work, in the understanding of roles, and the communicative embedding of planning in sociopolitical processes, and its use of digital tools, in recent decades.

Enormous possibilities have been created for the processing and presentation of planning projects by digitalisation: renderings, 3D simulations, and powerful drawing tools with a plethora of presets for achieving a particular design look all shape the training and office work of planners. This does not mean, though, that analogue procedures have been completely superseded by digital equivalents, observes Meißner. Instead, a productive juxtaposition of different methods has developed and refined, for example the preparation of initial sketches by hand at the drawing board followed by further processing at the computer. In addition, everyone has their own preferences, abilities, and specialisations, so that, in larger bureaus in particular, the division of labour is employed.

This extensive division of labour is an essential development of the last 30 to 40 years and does not owe itself exclusively to the expansion of the “toolbox”: parallel to this has been the considerable diversification of the planner's range of tasks, for example through intensive project management and contact maintenance for all relevant planning-project actors, from public authorities to investors, to the representation of interest groups and citizens. Planning bureaus are usually also involved in the public communication of projects, in which they organise and carry out information processes. Here there is once again a return to technological developments, as it is precisely in participation that digital, online-based tools have acquired relevance, existing in the form of multimedia presentations of projects and digital voting on participation platforms, alongside analogue formats such as forums or discussion panels. For the planners, these developments mean that actual drawing composes only a small part of their work, and that it serves much more multifunctionally in the planning process. Design drawings are, more than ever, means of communication not only with the customer, but rather with all those participating in and effected by the process.



This results in an altered understanding of roles for planners, who see themselves increasingly as moderators and shapers of social negotiation processes in analogue-digital urban space.

Academic planning in Germany has accompanied this transition and adapted its understanding of planning to changing social conditions. The commanding, dominant understanding of planning of the 1910s has been replaced by "planning on behalf of social well-being", in which "advocacy planning" – the representation of society's interests – has become the prevailing perspective in planning research and training. Following reconstruction after the Second World War, integrated development planning, small-scale urban regeneration, and the New Public Management successively evolved, among others, into the dominant guiding principles for planning. Today, the academic side of planning is as similarly diverse as the working environment in planning practice. Alongside a multiplicity of degree programmes from urban to landscape design, and the varied course content and orientation of individual educational institutions, prospective planners have countless individual specialisations and options for further training open to them. Entry from other fields has also become established for those with complementary expertise in communication studies, mediation, project management, or acquisitions.



Photo: 3000ad/photolia.com

The constant transformation of urban planning and the associated changes in the working lives of planners are the focus of several future research projects at the IRS. A part of the "MedPlan" project is the building of bridges between historically oriented research and present and future analyses of the mediatisation of planning. This forms the cornerstone for an empirical line of research in the new IRS interdisciplinary topic "Mediatisation and Digitalisation of Action", due to be carried out as part of the Research Programme 2019-2021. Research in this line has already begun in the "MedPlan" project of the department "Dynamics of Communication, Knowledge and Spatial Development", together with the Department for Historical Research, and has recently begun a sub-project in the DFG-funded collaborative research centre "Re-Figuration of Spaces". Here researchers under the leadership of Prof. Dr. Gabriela Christmann will investigate how digital tools – such as for visualisation or communication – alter urban-infrastructure and design planning, as well as the communicative planning for the participation of stakeholders and citizens. From this, will be derived insights into the change of spatial figurations through communicative action and mediatisation processes, placing the transition in spatial planning in the context of a completely new reconfiguration of the relationship between people and space resulting from globalisation, digitalisation, and the social transformations connected to them. ■



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