

# Future Dimensions of Public Security:

## Security 2025 – Four Scenarios

By Karlheinz Steinmüller  
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Study „Sicherheit 2025“ (Security 2025), by the Forschungsforum Öffentliche  
Sicherheit (Research Forum on Public Safety and Security), 2012



# Security 2025

## Scenario: The secure city

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**Subject:** Security as a social problem

**Key message:** Government and politicians tend to focus on combating (certain) expressions of criminality, but not their root causes. What neither the population at large nor politicians appreciate is the fact that social disparities, exclusion, poverty and unemployment are all closely linked to the development of criminal behaviour. The repressive measures they implement are counterproductive and simply exacerbate the problem. Preventative measures are aimed at the symptoms rather than the causes. In addition to this the adopted control measures are ineffective and both citizens and businesses are increasingly turning to private security firms for protection. Citizens should, instead be encouraged to think and act in terms of social inclusion rather than exclusion. Government and society at large need to lead by example.

**Background:** Cities are the incubators of future developments, and it is there that problematic situations are concentrated, including those concerning security issues. Segregation phenomena and the failure of the welfare state are brought into sharp relief within our cities, and are often evident in a city's external appearance alone, but above all in its social life, or the community of people. Apart from that, life in conurbations often places people under mental and physical stress thus contributing to social alienation. The political establishment usually attempts to create the impression that they can reduce crime and social conflict by decree, whereby the symbolic and counterproductive measures they implement are often more likely to exacerbate things.

**Scenario:** *For many years now Town X has been considered exemplary within Germany due to the experimental nature of its urban development measures and municipal policies. It is the site of one of the first ever inner-city shopping malls, and cycle paths were implemented at a time when other towns and cities were still entirely focused on cars as a means of transport. It was here too that one of the earliest participatory budgets was signed off. Over the past decade the character of the town has changed again and some critics even opine that it has almost split into two mutually antagonistic districts – more or less separate towns: over here the fashionable historic district and over there the dilapidated new town. The boundary line follows the course of the river for a stretch then goes along the old ring road, a few hundred meters of which reflect the route of the ancient town wall that was knocked down during the 19th century, and goes on between the northern section of the historic district and the quarter known as the Long Sheds because of the warehouses that used to be there right up to the 1970s when they were cleared to make way for residential housing. To a large extent these districts have each developed along completely different lines in terms of their residential populations, the quality of the infrastructure and social life. Urban security too is understood and handled differently in both parts of the town.*

Creeping disintegration ...

... due, among other things, to financial bottlenecks

*As far as the mayor is concerned the municipal authorities and town council have solved all their problems and done their homework. „We have managed to get control of municipal spending through rigorous austerity measures“, he says: „and we've taken steps to ensure public order and security. The residents are happy.“ But then he goes on to admit, „Things aren't quite so rosy in the new town but that shouldn't cloud the overall picture. Take a look at the historic quarter“, he says; „talk to people there.“*

*And indeed the old town with its Victorian housing stocks, generous pedestrian zone and park does look stylish and tidy. It is home to those who can afford the high rents or whose families have always lived in one of the town houses on the outskirts of the park. The well-to-do place great value on public order, cleanliness and security and try to keep anything at a distance that would compromise these principles. Thus the old town has gradually been transformed into a gated community, and one which is visibly sealed off. For those with eyes to see, this is evident from the superficial symbols of „ultra secure culture“, one of which is the private security guard nonchalantly strolling through the park. Others are the small cameras in the pedestrian zone and the mini „Quadrocopter“ that is once again flying through the streets at an altitude level with a three or four storey building. The question springs to mind as to why this security effort is necessary in the „oh-so-trendy“ historic quarter?*

Traditional middle class values are the order of the day in the „better“ part of town.

The developments that led to the current ultra secure environment were, and still are, welcomed by the residents. Ten or twenty years ago hardly a week went by without someone setting fire to a pram in some entrance hall or to a rubbish skip. Push bikes were stolen as a matter of course and attacks on people were on the increase, especially on the usually elderly people returning from night school, who were being set upon by drug addicts and robbed of their valuables. The park used to be the haunt of drug dealers, tramps and unemployed youngsters, who, when they weren't loitering around one of the newly built games arcades, used to enjoy rowdy drinking contests amongst other things. The number of cars that went up in smoke in those days was a problem that caused concern throughout Germany. Although one of the perpetrators would be occasionally be caught, the owners of high-end cars never really felt safe and the police seemed ineffective, just as they did when faced with increasing burglaries. When the small police station by the market square was closed down in the midst of all this the residents complained vociferously. The „Secure Old-Town Association“ that was founded soon afterwards received a great deal of support and came to possess a lot of political clout. By-election candidates could no longer afford to ignore security policy and everyone was obliged to take a position on the issue one way or the other.

Initial scenario: the town authorities were unable to get control of the prevailing crime situation

It was in those days that political measures, perceived crime and actual crime started to drift apart. For reasons of political strategy the town's politicians, and they weren't the only ones, joined in the clamour for more and harder punitive measures. The tabloids did their part in keeping such things as killing sprees, the use of weapons, sex crimes, and stalking, as well as resisting and interfering with the orderly exercise of their various duties by police officers, rescue personnel, railway employees and even doctors, on the political agenda, both at the federal and provincial level. But despite increasingly stringent laws, decrees and operational guidelines, there was hardly any tangible improvement in the local situation. Apart from that, some of the new regulations could hardly be implemented as they missed the reality of the situation completely. These symbolic policies, which at best addressed the symptoms, simply exacerbated the existing social issues. For example adolescent criminals were sentenced to significant periods in prison, based on the principle of „three strikes and you're out“. Early on, the practice of „warning shot detention“ was introduced to deter young delinquents by locking them up for a short time and then releasing them under a suspended sentence. The fact that their likelihood of ever being reintegrated into normal society was very low as well as the probability of their permanent exclusion from the employment market was accepted as the price that had to be paid. On balance overall the trend was more towards „lock ,em up and throw away the key“ than reintegration, whereby ever more (allegedly) dangerous criminals and drug addicts were incarcerated on psychiatric grounds. Hardly any expert still dared to submit a plea for eased sentence enforcement, or transfer to an open prison or early release.

Crime fighting as a contest in political symbolism

Within the small-town context it was often impossible to implement many of the fine-sounding election slogans. Because Town X (like most others) never had much money to spare, the municipal authorities were not able to fulfil promises of better equipment for the police and their own public order service group, improved visibility, a stricter enforcement of existing measures, closer community ties etc., at least not from their own coffers. When funding was scarce the authorities placed their hopes in public-private-partnership schemes and security partnerships – which ushered in the division of the town into two separate parts described above. Shop proprietors, cinema operators, restaurants and amusement arcade owners in the historical quarter held meetings with the municipal authorities and discussed new security schemes. In the end house owners and business proprietors agreed to pay for private security services via a community tax scheme. Police and members of the public order service group now patrolled the park alongside private security operatives. At the same time the extent of public spaces started being reduced through privately run monitoring systems and access restrictions. Just as they were in the shopping mall, begging, drinking and loitering were forbidden within the historic quarter and infringement of the rules were dealt with immediately and severely.

Residents formed their own organisations and commissioned private security firms

As the town's financial situation worsened over the years more and more responsibilities were outsourced to private security firms. At the same time more was invested in up-to-date monitoring technologies with a view to saving money in the longer term. The first things to be installed were mainly surveillance cameras of the same types that had long been used at the train and bus station and in the shopping mall, and which were operated by private companies as they had

Security technology replaces actual personnel

been in these locations. These were later augmented by high-tech' face recognition systems, which were able to identify individuals based on biometric markers in their physiognomy. Later still a new model from the USA was put through its paces, which was designed to recognise and report potential criminals based entirely on their behaviour and movement patterns. The security provider also deployed several miniature drones, or mini-Quadcopters, to patrol the area, which soon came to be known colloquially as „spy flies“. A few businesses, particularly bars and restaurants, introduced contact-free payment systems: their customers could have a chip implanted in their forearm, after which they were able to pay just by holding it over a scanning device.

These days the townsfolk are proud of their „leading edge anti-crime and crime-aversion measures“. „We do everything possible to provide our citizens with efficient protection from crime“, said the managing director of CC1 – Counter Crime One, the private security firm, which is keeping the historic quarter „almost crime free“. „Of course“, he continues, „there's nothing that we can do about domestic crime that takes place behind closed doors. But we're certainly in control of anything that goes on in the streets and squares, in the park and shopping mall and so on. We collaborate with the police on a crime mapping scheme, which involves capturing crime hotspots – on the street map as it were – which is to say those areas at which crimes, violent conflicts, pickpocketing, serious traffic crime etc., tend to be focused. On the one hand that gives us the ability to predict future crimes and on the other hand it enables us to deploy our personnel in an optimum way. High-end sensor technology and video-tracking processes, adapted to suit German conditions, already enable us to identify potential criminals, based solely on their behaviour and habits, with a certainty level of over 90%. We are currently refining our face recognition systems such that we will be able to spot bad intentions simply on the basis of micro-expressions. That will make pre-crime intervention possible. I'm guessing you're about to bring up the subject of data protection and privacy safeguards, right? Well, it goes without saying that we comply fully with all relevant legislation and guidelines, whether from Brussels or the federal government. Within CC1 strict adherence to the legally decreed image retention limits etc., is expressly considered to be a core management task. No law abiding citizen has anything to fear from us. And the kind of data abuse that we hear so much about in the media can't happen in our company for purely technical reasons if nothing else. You see, people aren't paying us to spy on them; they're paying us to solve criminal cases or – better still – to prevent them from happening in the first place. We refer to this as pre-crime operative criminality prevention. And we're pretty good at it!“

Anti-crime measures based on high-tech' monitoring leads to omnipresent surveillance

The „better“ part of town is sealed off

This is most evident at the boundary between the two so different parts of town. Here, along the riverbank and around the ring road, the surveillance regime is particularly stringent. The idea is to prevent anything from „seeping through“ as the security guard down by the river explains. „No drugs will get past us, whether by water or by road, to say nothing of weapons.“ Whilst this „frontier regime“ is mostly invisible and the historic quarter is not surrounded by actual walls as it was in the Middle Ages, unlike certain gated communities in America and Asia, it still makes sense to think of it in terms of a kind of high-tech' virtual wall. This not only encompasses seven or eight sentries and a number of surveillance cameras with automatic tracking, which can follow an individual from one surveillance zone to another, but it also includes ultra modern sensors that react to certain gasses. These so-called „electronic dog noses“ react to all common narcotics and explosives but are also programmed to recognise the smell of handguns. There are even robots on patrol at nights in areas of poor visibility. „Our cameras“, the guard explains, „alert us to suspicious persons. In case of doubt we go and check them out. You can already tell a lot just by the clothes they wear or the way they move. Some alcoholics are completely disorientated. We sometimes come across beggar gangs from the Mediterranean area. We always tell them to move on. Politely of course, but firmly. Ever since the entire historic quarter was declared a private zone under municipal law we have been enforcing a kind of domestic authority here, like they used to do at football stadiums. True, we have had a few complaints. Sometimes one of our own residents gets sloshed, er ... I mean seriously drunk, over there, on the other side. We escort them back to their front door when that happens. Or we might call an ambulance.“

Within the privatised security zone, anything out of the ordinary, even minor things, are treated as delinquency

Grubby image and a culture of turning a blind eye ...

„Over there, on the other side“ refers to the new town, the area inhabited by those we used to call the „socially disadvantaged“. If you were to cross the ring road and hadn't yet heard about the two towns in one, you'd be in for a shock. Graffiti everywhere, dirty building façades, filthy streets – and then there's the din and smell! You don't need a dog's nose to differentiate bet-

But attractive to a number of creative types

ween the two districts just by smell alone! Of course the public cleansing service also operates in this area – but just not with the same frequency as in the historic quarter. And not even the house owners and shop proprietors bother about cleaning the frontages of their properties; there’s simply no point in this area.

Live and let live is the order of the day here. Don’t you worry yourself about the noise I make and I’ll step over the pile your dog leaves behind without mentioning it. And what have the young drug dealers got to do with me? They’re just part of the scene. This rather relaxed way of living clearly has its benefits: two streets within the new town have become a Mecca for arty types – mainly those who no longer feel comfortable in the historic quarter.

Just as in the old town, austerity and efficiency measures have resulted in a reduction of state security organs in the newer part of town: employees have been let go and police stations abandoned. However surveillance technology can only compensate for this to a limited extent in this district: cameras in particular soon became the targets of choice („Peeping Toms out!“). For the past two years the Police have been making up for their loss by deploying mini drones. But even these are suffering considerable losses: children are making a sport of shooting down the spy-flies with catapults or dazzling them with laser pointers.

Technology only works well where it is accepted by society

That is why state security organs are rarely seen in this area, although whenever they do spring into action it is usually in a highly visible manner, such as when a special operations group is deployed against rooftop cannabis plantations or in private flats, or to close down some basement laboratory dedicated to the production of the latest designer drug or to making copies of patented medicines. It is an open secret that the police tends to become especially active whenever criminal activity from the new town spills over into the historic quarter or if its peace is threatened in some other way.

The retreat of state authority ...

Yet just as in the historic quarter the retreat of state authority has not really left a gap in the new town; instead it has left the stage free for new actors. In some ways the alternative security structures that develop in the new town mirror official state structures, but are frequently linked to organised crime. Gangs, often with a clear ethnic basis, provide protection against outsiders or other gangs, and settle squabbles among their „clientele“, as well as providing safe houses and offering support to the families of incarcerated gang members etc. Gang wars erupt from time to time, which are being fought out with increasing brutality.

... makes way for (often criminal) alternative communities

Not only do critics bemoan the situation in the new town; they are also convinced that residents in the historic quarter are paying too high a price for security, not so much from a financial point of view, although the current boom in the security industry shows that it is highly lucrative. What they are more concerned with is the idealistic, or social price, like the restriction of personal liberties.

„This isn’t the way we originally envisaged it.“ one of the original founders of the „Secure Old-Town Association“ laments; „If you look carefully all you can see everywhere are security measures. There’s the security guards, and I don’t have anything against them, but then there’s all the spy-flies and sensors. And although their symbolic effect is significant and they might even have displaced some of the crime over to the new town, if you actually look at the statistics – and not many people can be bothered to do so – you’ll notice that the numbers haven’t changed that much if you make the relevant adjustments for demographics and so on. Having spent years campaigning for more security and for protection of our children, I’m beginning to get the impression that we’ve got hold of the wrong end of the stick. We need to start with the social conditions, and get involved in schools, youth employment, integration issues and in the domestic sphere. All we’re doing with these ultra modern security things, for which I’m partially responsible, is contributing to the prevailing climate of general uncertainty and to the fear of falling victim to crime anywhere and at any time. How can you live like that in the longer term? And in the end what we’re doing with all these measures is undermining our right to privacy protection of the private sphere. But that’s just my personal opinion. The minority opinion of an old long-term association member.“

The price of security is the loss of personal liberty

*This sense of „general uncertainty“ is especially obvious in the historic quarter. As if the surveillance cameras and drones were not enough there are small posters sporting the association’s logo asking people to: „Report anything suspicious. Be alert.“ Neighbours should be keeping an eye on each other ... Trust is good but suspicion is better! God knows everything about you, but your neighbour knows even more ...*

A focus on security goes hand in hand with a culture of fear

*Although the level of crime is comparatively low, people in the town houses and villas by the park, and in the smart residences around the market square and pedestrian zone are fencing themselves in. Many of the houses have barred windows on the ground floor and one may safely assume that the internal burglar alarms are wired directly to the Counter Crime One operations centre – another income stream that security providers know not to neglect, based on the old slogan „fear is my business“.*

... and fear leads to exclusion

*And just as striking as the barred windows in the historic quarter is the degree of social conformity. Any noticeably different behaviour, torn clothing, or undue loitering is considered suspicious; rowdy behaviour is already regarded as a serious misdemeanour. Anyone, who as much as spits on the street risks an impromptu lecture from one of the private security guards on public order, cleanliness and hygiene.*

*There are even a few isolated, relatively minor cases of mob justice: freed prisoners have been mobbed in their residential areas, or subject to social exclusion, and sometimes even physically attacked. There are Internet sites listing those in the neighbourhood with criminal records along with details of their various sentences. Occasionally this post-sentence sentencing is accidentally directed at people who are innocent in every way, or at family members of criminals. „Either somebody robbed him or he robbed someone. Anyway, something happened...“ There is even an Internet site where one can name and shame neighbours, who fail to keep their front gardens tidy or make too much noise in the late evening.*

*Not everyone is attracted to the secure life in the historic quarter. A lot of young people are rebelling against the pressure to conform and against the total control. They are in search of something new and personal liberty and yes, are even prepared to deliberately risk violating social norms in order to prove who they really are. Anything they cannot get in the historic quarter, such as „sex and drugs and rock’ n’ roll“ as people used to say in their grandparents’ day, they can find on the opposite side of the river, across the ring road. The fact that this causes them to fall into bad company in the eyes of their parents just makes the whole thing more interesting. They see the security guards on the bridge as their arch enemies – and over the longer term they run the risk of being counted among the „dross from the other side“ themselves, and of really sliding into the criminal underworld.*

Rules that are too strict will drive away the youth

*But even a few of the elder residents are starting to complain that life in the historic quarter is rather boring: „There used to be loads going on around here and you could always hear police sirens. Now it’s tranquil, too tranquil. It’s almost like a graveyard.“*

*Whilst violent altercations between youth gangs and between adolescents from the new town and the private security firms are not an everyday occurrence, they do happen with sufficient frequency that people are already considering even more stringent security measures. The notoriously undermanned police force is staying out of these „private clashes“ for the time being. All in all the social dynamite within the town is on the increase. Any ostensibly minor incident in the poorer districts could trigger a massive explosion of violence. Neither the desire for greater security, nor the attempt to get everything under control has resolved the underlying problems. On the contrary: they are in the process of turning the town into a powder keg.*

Tensions and conflicts are burgeoning below the cover of urban security

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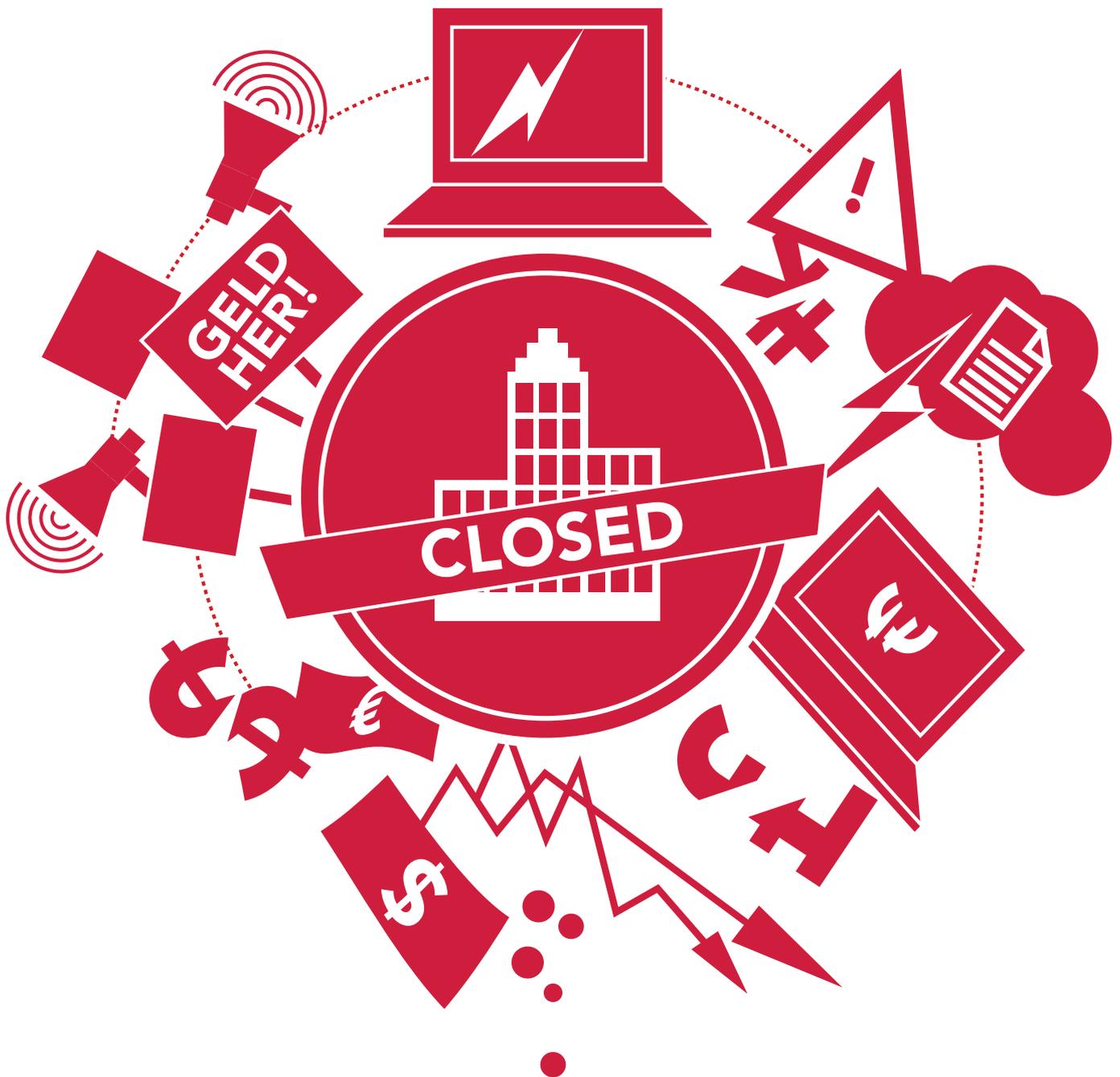
The complete FÖS (Research Forum on Public Safety and Security) study, „Sicherheit 2025“ (Security 2025), from which the above scenarios have been taken, can be downloaded at [http://www.sicherheit-forschung.de/schriftenreihe/sr\\_v\\_v/sr\\_10.pdf](http://www.sicherheit-forschung.de/schriftenreihe/sr_v_v/sr_10.pdf)

# Security 2025

## Scenario: Banks off line for four days

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**Subject:** Systemic risks and non-intended incidental consequences

**Key message:** Systemic risks relate to „highly interlinked problem complexes with broad ramifications and long-term effects that are difficult to estimate, the description, categorisation and management of which are associated with significant problems in terms of knowledge and evaluation“ (Renn et al. 2007). They are a side effect of modern society in which systems and meta-systems can be intermeshed to a hitherto unknown degree, particularly through the use of technology, and which are characterised by a high level of complexity, uncertainty and ambiguity. Nevertheless, systemic risks are usually treated in the same way as „simple risks“, which – given sufficient time and money – can be controlled. One of the consequences of this is that there are no adequate management strategies for „the unthinkable“: no experience in repairing complex IT infrastructures; no fall-back position that would, for example, enable the manual management of transactions. There is also insufficient personnel; no crisis management plan etc. Everyone assumes that a system collapse with really far reaching consequences will simply never happen. Nobody considers the systemic character of such disruptive events, and any solutions that are being pursued just in case are purely technical in nature. Because companies tend to try to solve faults in house and not to say much about them in public, hardly any systematic research is carried out and no solution strategies are being developed. Over the longer term, the helplessness of banks and the state, and contradictory reports in the media, could lead to a loss of faith and reduced loyalty within society as a whole.

**Background:** As a matter of principle the banking intranet is hermetically and securely sealed off from the Internet. The complexity of the underlying networks is, however, becoming an issue of increasing magnitude. In addition one can assume that even the banks will be affected by the current trend of offloading ever more functionality to the Cloud and the increasing use of outsourcing. Changes and updates always entail a risk of unforeseen outages and problems. In order to better control the inherent complexity and because it is more cost effective, companies within the financial sector prefer to use systems from a single source provider. For the same reason a lot of system redundancy has been dismantled, apart from that which is a legal requirement, as this reduces the cost of system maintenance. This has transformed the inter-bank payment transaction system to a technical monoculture, one of the disadvantages of which is that any fault that arises will affect the entire system. This lack of redundancy has also reduced the available buffer capacity within the system.

**Scenario:** *Security is still a big issue for banks in 2025, for, clearly, the entire sector is based on trust. But this shattered in September that year. It starts harmlessly enough: customers at bank X are complaining about duplicate transactions and transaction amounts that have clearly acquired a few extra zeros, or about other inaccuracies, and all regardless of whether they have used a mobile device to transfer the money, as is mostly the case, or from one of the PCs still in use in many homes and businesses. Branch and hotline staff react calmly as per the relevant guidelines: such incidents, they assure their customers, are extremely rare and are usually down to data transfer issues ... What they don't say is that the customers themselves are responsible for 95% of the accounting errors and that the remaining 5% are quite literally the work of criminals. Admittedly it is these complaints in particular that are increasing ...*

Minor irregularities are the early indicators of a looming crisis

*Whilst staff members out in the individual branches of Bank X are still working on the assumption that theirs is the only system affected and that it must be down to some sort of bug, their colleagues in Central Services are just as alarmed as those manning the support hotlines. Over the past few days the number of complaints and the concomitant back charges have suddenly shot up, and things are getting worse by the minute: the notion that this is nothing more than a cluster of coincidences is no longer tenable. Could it be a targeted criminal attack on the bank? The in-house security experts draw a blank: the bank has complied fully with all relevant rules and standards, and anyway IT security is down to the IT service providers who not only provide the banking application software but also take care of secure data hosting. Along with most other banks, Bank X has, for the most part, „shed its IT burden“ and now uses „IT from the socket“, i.e. „software as a service“ and „Infrastructure as a Service“, all of which it has been receiving as a packaged service for years now from one of the big three Central European service providers. Minor irregularities are the early indicators of a looming crisis. Along with the IT system all*

Along with the IT system all responsibility has also been transferred to the Cloud

responsibility has also been transferred to the Cloud. The service provider has already identified the issue: there has been a steady increase in faults ever since they carried out a routine software update to close a couple of security gaps in the mobile banking system.

In the meantime the social networks and mini blogs are abuzz with rumours of „a massive concentration“ of transaction errors at Bank A – and not just there either! Several of those affected have already turned to the relevant consumer protection authorities. And what the average Joe thinks about the whole thing can be seen in a number of short videos: „What, 10 billion has disappeared from your account? Can't be a mistake on our part. And, by the way, you'd better start thinking about how you're going to pay the interest.“ Jokes like this hit the nail on the head given the current climate of festering distrust and dissatisfaction with the banks. The reputation of banks in general has long been subjected to the erosive force of reports of fraud in Internet auctions – even in the business sector – and of the risks involved in online and smartphone banking. And wasn't there some recent case of fraud in the CO2 emissions exchange system involving billions?

A loser will never be short of people happy to rub it in

Bank X does its best to reverse the situation. The chairman of the board himself holds a press conference, which is a complete disaster. His talk of „a few isolated incidents that were rapidly resolved“ was met with gales of laughter. And it is simply not the case that the bank has the situation under control. In his heart of hearts the chairman of the board is actually pretty glad that his predecessor decided to go with a single IT provider: from a purely legal point of view, far from being the culprit, Bank X is in fact the injured party ...

No plan in place for public communications during the crisis

Almost simultaneously with the press conference an otherwise unknown hacker group announces that it was responsible for the attack on Bank X, which was designed to highlight „the bank's shoddy approach and the gigantic breaches in their IT security system that could be exploited by cyber criminals“ but these turn out to be a bunch of „wannabes“, out to grab a bit of publicity.

It is difficult to identify the root cause of any given fault within a complex system.

The service provider is now focussing on ring-fencing the error as well as identifying the cause and finally fixing it. Whilst it would, in principle, be possible to „rollback“ the upgrade, as long as nothing definite is known about the actual cause, the entire system is compromised and simply reinstating the system is not enough. So the software engineers at the IT company set about developing a set of patches as swiftly as possible. The plan is to roll them out the following Sunday – on all systems that received the upgrade in question; after all it is not only Bank X that has been affected. Tests carried out on the Saturday are successful. Sometime around midnight on the Sunday the exhausted IT engineers report that the operation has been completed.

The bank's employees have watched the „software wizards“ at work with a mixture of respect tinged with scepticism. When they switch on their terminals on the Monday morning everything appears to be normal at first. But when the customer transactions in the branches and via the cyber-sphere reach their usual Monday morning proportions a short while later it soon becomes apparent that the crisis is not over yet. The systems seem to work they have gone crazy. Transactions are ending up in some sort of digital Nirvana, the on-line banking lines are more than hot, and the system is even refusing to accept some of the banking staffs' passwords. The only consolation is that theirs are not the only branches affected and that the problem is not limited to Bank X.

Is the fix worse than the fault?

Journalists pounce on the „scoop“ and Internet portals and news stations report live on the situation: „Planning to transfer money today? Best not bother!“ In one interview the Bank Association's press contact tries to tone things down: yes, he says, there have been some isolated issues and the banks are working on these „without pause“. By tomorrow everything will be back to normal. Some customers even go back to good old telephone banking, which hardly anyone has used for many years. Mostly they are greeted with an engaged tone, as the telephone banking staff numbers were slashed long ago. The situation is much the same on the bank's hotlines: „Your call will be answered as soon as a member of staff becomes available.“ A number of shop proprietors and others from the small business sector put in a personal appearance at their local branch and demand that their transactions be processed as reliably as they usually are; some even threaten legal action. The branch workers enter the data into their terminals and reassure the customers that everything is working normally – but they're not so sure themselves.

Hotline overload – the price of staff cuts

The banks start putting pressure on their service providers for not maintaining the contractually guaranteed quality of service. The providers are in turn „putting the squeeze“ on the software manufacturers, who swiftly place responsibility squarely on the shoulders of the companies, whose software testing procedures they use, who just as rapidly point the finger at the chip manufacturers and insufficient specifications. Aren't the self-same chips from the same manufacturer and the same series found in almost all servers used throughout the banking sector? And don't the big three IT companies share the entire European banking sector between them? The witch-hunt gets underway.

Lack of clear responsibilities and „sloping shoulders“

Only a few years previously the new buzz word had been „security by obscurity“: if systems are so complex that nobody can possibly understand them in detail then criminals will also find it difficult to identify their vulnerabilities. But now, when it comes to finding and resolving the fault, the flip side of this philosophy is taking its revenge: „insecurity by obscurity“!

A lack of transparency – a dubious security method

On the Internet people are calling for an online banking boycott: customers should refuse to use online services until such times as the banks have identified and rectified the fault. A raft of short videos on YouTube are showing how to withdraw money over the counter in local branches – and are poking fun at banking staff struggling to deal with actual hard cash and making a mess of counting it out, or are tipping the final few Euros out of empty cash drawers.

By Monday evening the biggest thing in nearly every news show is the subject of „off-line“ banking: many financial institutions have had to take their IT systems „temporarily“ off line in order to be able to rectify the current fault without producing new ones; the plan is to have them back online by Tuesday afternoon. Not even the newsreaders appear to believe that one. Swiftly composed background reports provide an impressive insight into server farms. Experts struggle to explain the various data flows involved whereby they employ a jargon that not even trained bankers can understand and that they explain away as new-fangled technical terminology in response to the journalists' dogged questioning. One professional futurist, who just happened to be available for an interview, even waxes lyrical about banking IT systems having finally developed an independent life of their own – an actual biological existence! – Darwinian evolution, breaking out of the finance sector! Could it be that our smart homes and intelligent traffic systems are on the verge of become independently intelligent – or developing a will of their own?! And if so, what plans might they have in store for us humans? A few commentators speculate rather freely on the potential political ramifications: maybe it isn't even a technical failure; what if it's a cyber attack à la Stuxnet? Is someone trying to inflict damage on the Eurozone? Who might be behind it all? Who actually gains from the catastrophe?

The media contributes to the crisis: it's a showdown between information and disinformation

It is no longer possible to identify the authors of a given attack with any degree of certainty.

On „Black Tuesday“ nothing works and even where something might have worked the customers are boycotting it. The banking black out is the top story across the media. Talking heads in various TV shows pontificate about the potential impact on the national economy. The ramifications of the transaction system shut-down are manifold: the financial schemes of major corporations start to go off the rails; hospital directors are complaining about not being able to do their accounts, and rumour has it that the financial institutions are no longer accepting deposits. But these latter are keeping a low profile. Pensioners and those on benefits are getting worried: tomorrow is pay day; how will they make ends meet if nothing appears in their accounts? The only positive news is that ultra-high-speed-trading in the money markets is still working as it should, obviously on its own independent IT system ... However some day-trading-processes have been affected. Altogether the effects of the banking blackout have spilled over into the stock markets. The share prices of the majority of finance institutes are in free fall and are dragging down the share price in insurance companies, commercial groups, logistics companies, property funds, utilities, in fact all sectors. The authorities are considering closing the stock markets.

The crisis is spreading to other subsystems throughout society.

At least it is still possible to make credit card payments as they too are based on a completely separate system. But mobile payment systems using smartphones have been affected, although not all of them and not everywhere. Even specialists are not able to explain which systems are affected and for what reasons. Diametrically opposing views are expounded in various talk shows. But the worst thing is that cash point terminals are refusing to accept EC cards, probably because customer's status checks can no longer be carried out, because this requires access to the banking system. And practically the entire population seems to have an urgent need for cash on this „Black Tuesday“ of all days ...

The banking crisis leads to a cash-flow crunch – which even affects Joe Public this time

There are long queues at ticket dispensers too – at least until rail passengers finally realise that the machines are only accepting cash. Whilst this mostly leads to outbursts of swearing at railway stations around the country, the mood in supermarkets is far more explosive, and potentially violent. Customers let off steam at the checkout girls, who struggle in vain to explain why it is no longer possible to pay by EC card or by smartphone.

Young people in particular are completely bewildered. Many of them don't even own anything as antiquated as the quaint old 20th-century wallet or purse. They only ever manage their assets and accounts, pay their bills and do all their shopping using various mobile devices, whereby they utilise various types of „digital cash“. But the trend over these few days is very definitely to revert to notes and coins. As long as their reserves hold out, some banks are giving each of their customers a 100 Euro „interest-free cash bridging loan“, for which they must sign on a photocopy of their photo identity card. Other banks are less customer friendly; they simply close their branch outlet. The first ever German „bank holiday“ ... The few branch offices of a few private banks that clearly use a different IT system, are all but overrun. But because inter-bank trading has also been affected, even they cannot carry out the required transactions in the majority of cases.

A return to cash is all but impossible

By Tuesday afternoon the crisis has reached the Bundestag (German Federal Parliament), which happens to be in session. One of the opposition parties claiming to be speaking for the „man in the street“, calls for a session on the subject of „financial transactions and security“ – after all, they say, is it not the case that ordinary citizens will bear the brunt once again? Whether he will or not, the Finance Minister has to take questions from the floor. He doesn't have any answers: after all, he maintains, it's a matter for the banks and IT companies ... The government's job, he goes on to say, is to provide an appropriate regulatory framework, of which the Basel IV Accords are an excellent example. Getting the relevant IT systems to work, he states, is the responsibility of individual companies and not the government ... Members of Parliament complain vociferously about the fact that they've had to use the Internet to keep abreast of the situation. The minister responsible explains that no information that would provide any „real insight“ into the situation has been forthcoming from the banks in spite of repeated urgent requests. The Federal Financial Supervisory Authority, he said, has threatened certain banks with the revocation of their banking licence, however the banks themselves probably don't even know what has been affected and to what degree.

Politicians are alarmed – but clueless and without a clear plan

The chaos continues on Wednesday. Transactions have all but ground to a halt, and cash dispensers are still switched off. Whilst certain banks have reinstated their online presence, they are struggling with enormous new problems, not least of which is unprecedented customer demand. Long queues assemble outside several branch outlets. Others are closed „for technical reasons“. The effects of many banks' decisions to reduce the number of high-street branches and cut back on staffing levels over the past few years are now painfully obvious. At the same time as working through a three-day backlog of transactions, the other thing to be tackled, as a priority, is to check for erroneous transactions carried out in the past. Bank X, which could be considered to be one of the pioneers of the current crisis, has already asked its customers to report any accounting errors. But the hotlines, including the extra ones that have been set up, are blocked by urgent requests. Pensioners and people on state benefits are furiously demanding to know when they will receive their money. Businesses are making dire threats to the effect that: „if payments are not received on time we will be forced to initiate insolvency proceedings“. The bank's web-based feedback sites are in a state of complete meltdown. The media are talking in terms of the complete collapse of the economic system. People are anxious and uncertain. Older citizens are reminded of what their parents and grandparents told them about the global economic crisis back in the 1930s. One elderly lady is reported as saying: „Luckily I've still got my allotment garden“.

Systems that are still working – or, which have been re-commissioned, are completely overwhelmed

The German government is considering whether to impose a nationwide payment moratorium. This would meet with legal difficulties and the Federal government would have to agree some sort of emergency legislation ... At least one parliamentary faction advises simply leaving time for the problem to solve itself: „all we have to do“, they claim, „is to declare a national holiday of about three to four days' duration“ ... However this requires a consensus across the board and would therefore have to be agreed by parliament. If not then at least one state is already threa-

One problem: varying reaction times between different systems

tening to involve the Federal Office for the Protection of the Constitution. One Member of Parliament strikes a cynical note: „By the time we take a decision in this forum the crisis will have run its course, one way or the other.“

The first spontaneous demonstration under the slogan „give us our money (back)“ takes place on the Thursday. Some people are even calling for the abolition of banks, which they say „have several times in recent history proven themselves incapable of financial management“. In the meantime many people have already withdrawn all of their cash deposits. Some banks are permitting „customers that are personally known to them“ to take credit. The transport system is affected: media reports about people who are unable to put fuel in their cars or buy tickets for public transport. Some people form carpools. Still more take to travelling without buying a ticket stating glibly that: „If the inspector comes along I'll pay by bank card“. But transport operators are not checking tickets. According to one spokesman, „Either the banks or the state will have to cover our losses.“ A few anarchists are celebrating the abolition of capitalism.

Every crisis has its beneficiaries

By Friday the banks have mastered the worst of the technical issues. Although no one is really 100 per cent sure what fatal series of bugs led to the irregularities in question, the patched software has now managed to pass several rounds of testing. The banking application provider has even taken the opportunity to replace certain hardware components. However it is well known that the company in question has taken such a financial hit that an aggressive takeover by a competing firm is imminent. That would of course reduce the competition within the IT sector yet further ...

The aftershocks of the crisis will continue long into the future.

The systems are back up and running, but everything, both the banking personnel and the technology, is overloaded. Most financial institutions have obliged their staff to work extra shifts over the weekend. Even still it will take weeks before all outstanding transactions have been completed and erroneous payments have been corrected. But these efforts will not be able to compensate for lost business and cash-flow bottlenecks. Bank X is on the brink of bankruptcy. Although the bank is not a central part of the overall system, its collapse could still trigger a chain reaction. Interbank commerce has ground to a halt and the entire sector is eagerly awaiting a multi-billion Euro bail out by the European Central Bank (ECB), which is putting further negative pressure on the Euro exchange rate.

... and it will take just as long before it will be able to calculate the bottom line damage caused by the crisis

Other ramifications become apparent over the next few days: the commercial sector – particularly that part dealing in high-end consumer goods – is complaining of catastrophic sales slumps in the previous week, but is at the same time hopeful that people, particularly the mid- to high-income sector, will save less and invest in high-value goods rather than entrusting their money to the banks. But some sectors are reporting production interruptions, whether because of the short-term drop in demand or due to payment delays resulting in a business slowdown. Frankfurt too has lost ground to London as a stock exchange centre, and no one dares hazard a guess as to when the money markets might recover. Claims against the banks are piling up and are likely to keep the courts occupied for years to come. As yet it is not certain who will end up footing the bill: the banks? The IT service provider? The chip manufacturer? Or, given the fact that the root cause of the problem was never identified with 100 per cent certainty, was the whole episode not an „act of God“? In the end it will be the taxpayers who shoulder the burden.

There is only one thing that is certain: the majority of the burden will fall on the shoulders of ordinary citizens

The population's trust in the banking sector had already taken a severe knock in the banking crisis (at the turn of the century) and has now suffered another heavy blow. People have also lost faith in the crisis management abilities of the government and authorities. Economists estimate the damage at some 0.5% to 1% of the year's GDP. Always assuming, of course that the impact of the recent banking crisis can be overcome quickly ...

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The complete FÖS (Research Forum on Public Safety and Security) study, „Sicherheit 2025“ (Security 2025), from which the above scenarios have been taken, can be downloaded at [http://www.sicherheit-forschung.de/schriftenreihe/sr\\_v\\_v/sr\\_10.pdf](http://www.sicherheit-forschung.de/schriftenreihe/sr_v_v/sr_10.pdf)

# Security 2025

## Scenario: Crisis communication below freezing point

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**Subject:** Crisis communication

**Key message:** In extreme situations conventional theories of crisis communication theory fail. Such a situation requires both the ability to deal with uncertainty and ambiguity and an ability to provide answers. This challenge is at odds with management and communication structures in and between authorities. Attempts to control crisis communication by means of a one voice policy are not realistic. Ignoring meaningless communications such as “everything is under control” is disproven by what is actually happening and damages officials’ credibility. The same applies to conflicts of interpretation and the power to define, which start right at the beginning of a crisis; they happen depending on situation, political topic, media or the economy. The media have a key role when it comes to crisis communication. As well coordinating campaigns and distributing information, the media enable warnings to reach the population. On the other hand, news reporting tends to follow an idiosyncratic media logic. Events or facts are simplified, personalised, emotionalised and dramatized. Secondary or journalistic crises are a possibility (see Raupp 2010). Electronic media accelerate this process, yet it also opens up possibilities of self-organisation within the population.

Over time, emergency teams increasingly switch to “direct communication channels” (“buddying”) which results in descriptions of situations increasingly dissipating by the time they reach crisis units and coordination groups. In these circumstances crisis communication only really works in unusual, informal, and especially local, ways; social cohesion is required.

**Background:** Disaster control units work through the problems of everyday risk prevention very efficiently. However, “major crises” or disasters create different conditions. According to Felgentreff and Dombrovsky (2008) disasters are situations that are impossible to overcome with the means available.

In the course of climate change an increase in extreme weather conditions and therefore potential large-scale damage and disasters are to be expected. At the same time, the framework for dealing with a crisis is changing. In a national disaster situation the decentralised structure of federalism has its price as coordination efforts are often complicated and cumbersome. The situation is aggravated further by a duplication of responsible operators, caused by the privatisation and liberalisation of critical infrastructure and the security sector. Furthermore, the German armed forces, the Bundeswehr, that were previously called upon as a reliable resource are no longer available to the same extent. The increasing use of electronic media is changing the influence on crisis management in ways yet to be dealt with.

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**Scenario:** *In February 2025 a tremendous weather disaster hits central Europe. It snows for days on end, and when the snow stops there is a strong icy wind blowing from the North. As soon as the snowfall stops, temperatures drop to below -25°C, and the wind changes to one coming from the East and gets stronger.*

*The German people are not entirely surprised by these severe weather conditions. Two days prior to the first snowflakes falling, the weather service had issued a warning and the president of the Federal Office for Citizen Protection and Disaster Support (BBK, Bundesamt für Bevölkerungsschutz und Katastrophenhilfe) recommended that households stock up on additional food, water and batteries. The media, however, were amused and reminded people of the “unnecessary recommendations” the president had made in the year 2010. It is all just scaremongering they claimed. A short video on YouTube made fun of the press conference and showed the president being gradually swallowed up by mountains of snow. The video received a vast number of clicks in the first three hours. Citizens then received targeted weather warnings on their mobile phones. The more specific the forecasts for the particular regions were, the greater their effect was. Some people responded to the warning and stocked up on food, but most people put off such decisions “for the time being”. They could not imagine that “suddenly nothing would work anymore.”*

Warnings are cast to the winds as a result of earlier “false alarms”

*A few days later main roads and even some motorways have to be closed, trains are getting stuck in snow drifts and airports are being shut. In towns and in some parts of the countryside clearing services are in constant operation, yet the volume of snow is too much for them to cope*

with. In many places there is simply no more room for the mountains of snow and removing it cannot be contemplated due to the lack of resources. In areas such as the government quarter the mountains of snow are removed, but only very slowly.

The crisis units report that everything is under control. The fire services, the Technical Relief Services (THW, Technisches Hilfswerk) and the relief organisation work around the clock; the crisis control teams are doing a good job - local and regional crisis management works. The fire services and the THW are carrying out orders to clear snow, especially to be able to supply cut-off villages with food and heating oil, and it is not only in the mountainous regions where they have to remove fallen trees.

The primary message is: everything is under control ...

The German Joint Information and Situation Centre (GMLZ, Gemeinsame Melde-und Lagezentrum von Bund und Ländern) is doing its job; it supports the Länder with information and resource management. The problem is that information is incomplete as the national risk analysis has not yet been completed. The European Emergency Response Centre that was agreed upon around 10 years previously faces a similar problem. Data from member states is still missing and so an overview of capacity is incomplete. As a consequence of the need to economise in the EU, management is uncoordinated. Even operators of critical infrastructure withhold their data for competitive reasons.

despite the lack of data and organisational shortcomings

In places where trains have become stuck relief organisations (DRK, the German Red Cross; ASB, the Arbeiter Samariter Bund; MHW, Medizinisches-Hilfswerk; JUH, Johanniter Unfall-Hilfe) distribute blankets and hot drinks to passengers who have to wait, in some cases, for two or three days before continuing their journey. The provision of food is secured for the time being. Although the "field kitchen" concept from the time of civil defence had been abolished, the modern concept of support based on cooperation with service providers is proving viable. In the case of a crisis relief organisations have agreed framework contracts with food suppliers, canteens and caterers, which would come into force. They have for instance, reserved areas of shelf space in supermarkets for themselves that can now be laid claim to. At the same time employees from relief organisations take on the work in canteens in retirement homes, universities etc. and organise the supply of meals for the emergency teams and the population with the help of caterers and food suppliers.

The concept works reasonably well initially. However, after a few days replenishments start to falter as suppliers face delays as a result of the snow. The negative side of the just-in-time principle becomes apparent. Disaster protection that relies on the same systems as private trade is now affected. The media are reporting serious problems with food supply. Commentators ask the fearful question of how many days of snowfall and extreme frost the country can possibly cope with.

Initially the media reports are predominantly factual

In many conurbations the public transport system (ÖPNV, Öffentlicher Personennahverkehr) is operating, at best, sporadically. Systems icing up and damage to the points are high on the agenda, buses and trams are not designed for prolonged low temperatures. Both motorists and public transport users are suffering as a result of the extreme cold weather – that is, if their car even starts. There is a sharp rise in the number of collisions, due to the many badly cleared roads and the mountains of snow that obstruct visibility at junctions. Hospital casualty departments are very busy. In some areas fuel is running low.

In other areas overhead power cables are breaking under the weight of the enormous amounts of snow and ice and high voltage pylons get bent over. Although only specific power lines are affected, the outages affect the whole network that is already overloaded. Towns' electricity usage has increased considerably and some coal-fired power stations suffer outages for periods at a time. There is some relief as a number of industrial plants stop production. Deep snow and low temperatures complicate repair works on power lines, and the teams often struggle to reach damaged pylons. TV reports not only show images of frozen homeless people but also of families that have had to leave their homes and find refuge in emergency shelters, poorly-heated schools and sports halls. Some communities have thought ahead; fire stations and village halls have external supplies and are able to look after their residents by providing warmth, information

Communication is increasingly being emotionalised

and hot meals. In many places residents are beginning to organise themselves and take things in hand. But there is a lack of basic provisions; five snow shovels are not enough for all the inhabitants of a tower block.

In some Bundesländer the disaster situation is being officially confirmed. Three Länder are demanding the official help of other Länder and disaster assistance from the Federal Government, whilst others are still waiting as they do not want to set a precedent. The interministerial coordination group (IntMinKoGr) convene according to plan. The joint committee of the Federal Government and the Länder is to support in dealing with the need for coordination between the Länder.

Despite all official requests to “stay calm” people start stockpiling. Emergency generators, batteries and candles have been sold out for days. Emergency teams report that they have reached the limits both in terms of personnel and of resources.. In contrast, the authorities continue to assert that everything is under control and that there is no need to panic. People are desperately waiting for an end to the extreme weather conditions. Those affected vent their anger through the media. Why should you have to wait for three days shivering with cold for assistance? They call this crisis management – it is a crisis in itself! If they had told us more explicitly that this kind of thing could happen and how we should have prepared ourselves, - weather forecasts did exist after all – then we, and the whole population would have been able to prepare itself for the crisis! What are we paying taxes for, if people are caught “with their trousers down?”

On television the minister for the interior has to answer accusatory questions such as: why is the government not doing anything? Are there no contingency plans? What about the armed forces (Bundeswehr)? A lack of accountability is interpreted as a lack of competence. The cornered minister announces that that he will pass a law in Federal Government for the creation of a crisis defence centre whereupon the presidents of two Länder demand an immediate meeting with the Federal Chancellery as they suspect that this interferes in their jurisdiction. In contrast, two smaller Länder announce that they are open to the minister’s initiative. A regional fire brigade association starts a campaign with the message “no interference from the capital city” on facebook. The minister president of the Land replies indignantly that he is surprised that the fire service “has time for this type of thing at such a serious time.” The Macroeconomic Policy Institute (IMK, Institut für Makroökonomie und Konjunkturforschung) meet for a special session but a statement cannot be agreed upon. The Federal Chancellery declares the crisis to be top priority and as such a matter for the Federal Chancellor’s office; it announces a crisis prevention summit to be held once the crisis is over. But who listens to wrangling in the capital city at a time of acute crisis?

According to announcements circulating on the internet, Länder took snow ploughs, de-icer and other material off one another and even bribed the THW. Some large companies cite incalculable damages to the economy in order to succeed in receiving priority treatment with regards to electricity supply and road clearing. Other companies put some of their resources, for example fire engines, at the disposal of the general public. One grit manufacturer explains that he operates on a strictly “first-come, first-served” basis. In most Länder school lessons are cancelled “until further notice”. Surprisingly, the media independently seem to cover the same topics. All day long there are reports about rescue workers getting stuck and collapsed roofs and then they turn their attention to the situation in ports. In many towns and communities, supermarkets are like ghost towns – and central warehouses for most retail chains are also empty. Supplies are mainly to be found in areas where these warehouses cannot be easily reached. The fire brigade and the THW do not have enough manpower to clear all the entrances that have been blocked by snow in order to open gates that have been frozen shut. In addition, fuel supplies are faltering, on the one hand because there are many petrol stations without electricity supply in disaster areas and, on the other because there are problems with replenishing fuel. The Dutch and North German Media report that even the delivery to refineries is disrupted due to partly iced up shipping lanes.

The media transmit the unedited voices of those affected as they make accusations and look for scapegoats

Confusion over responsibility hampers communication

Even the emergency state food reserves (civil emergency reserves and Federal grain reserves) can only be partially used. Transport vehicles cannot get through the snow chaos or cannot even refuel. The Bundeswehr helps where it is able to, but hardly has any available recruits that it could deploy to help on the ground, since the reform on the obligatory military service in 2011. The emergency supply of drinking water is problematic due to the cold. In many places the snow has become so deep that the roads cannot be cleared with the means available. Snow blowers that can cope with the compact masses of snow are only available in the southern Länder. As the weather is not expected to change in the coming days, a crisis-driven migration to "safe areas" has begun despite official warnings against such action. It is mainly people who live in towns where there is a food shortage who are trying to fight their way through to friends or relatives in the country, where they hope the supply situation is better. In particular, people are heading to villages and rural areas that have been independent of the national grid for years. The situation is also reversed, families from villages without electricity head to towns where they hope the situation is better. This leads to thousands of abandoned vehicles on motorways and country roads. Hospitals have reported cases of frostbite – and of people frozen to death. Some hospitals in areas that are affected by power cuts have to close down when the oil in their emergency generators runs out. It is not possible to airlift ill people in all areas.

A rapid change (of scandalising) topics in the media

The crisis management teams are faced with ever more difficult challenges. Different operation centres and crisis units frequently struggle to gain a reasonably complete and reliable picture of the situation. Which vehicles are still to be dealt with? What is the fuel situation? Who still has helpers available? What is the current location of the emergency teams? Could neighbours or the neighbouring Land help? Questions about setting priorities and allocating resources loom large and demand "political" solutions. Which facilities and infrastructure must definitely be maintained? Should towns be the priority when supplying foodstuffs? The media report that governments plans to "write off" some small towns. Violent protests were followed by isolated denials on the part of officials, which hardly anybody believed.

Decisions are becoming more complex ...  
with increasingly unreliable information about the situation

Electronic means of communication, including between the crisis teams and the crisis management teams at local, Länder and national level and that of the companies operating in the area of critical infrastructure are blocked by irrelevant, out of date, inaccurate or purely false reports, which usually cannot be checked due to lack of time. The problem of technical interoperability of information and communication systems had been solved many years ago, yet cooperation still frequently fails due to differing organisational cultures and systems. No person or institution really has a clear overview; neither the Land disaster protection officials nor the Federal officials. Frequently, the emergency teams receive contradictory instructions from the same control centre. What works after a fashion is informal communication between operators who know each other personally and trust each other ("buddy talk"). Additionally, in the untested precedence-free crisis the tested guidelines for disaster management prove to be inadequate. Those who choose to deviate from these guidelines are obliged to assume personal responsibility - there are not many people on the committee prepared to do this.

A solution could be "informal channels"

In talk shows the actual disaster is displaced by the crisis in communication and in competency. Discussions are mainly about the reciprocal apportioning of blame between the Federal Government and the Länder, between the departments, and between the relief organisations and the heads of operations. In one of the rounds a member of the opposition accuses the federal minister for the interior of requesting support from the European Union far too late. He was asked when he would finally request technical and organisational help from abroad and from Nato. Apparently, other European countries that were also affected by the weather disaster had already demanded the few resources available from northern Europe! Nobody in Brussels – perhaps least of all the Germans – had counted on Germany needing foreign help. The minister raised an objection to this saying that the Federal Government was only able to step into action once the Länder requested it, which was met with laughter. One opposition party now wants to abolish "fair-weather federalism".

Political apportioning of blame instead of constructive cooperation

TV channels are reporting non-stop on the "weather disaster" or the "new ice age". Climatologists have to justify themselves and answer questions such as: What about global warming? It would be quite useful now! Frequently, news reports contradict one another. Are the ice floes piling up to ten metres high at the Baltic or at the North Sea coast? On the internet the most

strident horror stories are circulating, right up to stories about cannibalism. If electricity, mobile phones and the internet cease working a portable radio or a car radio is the only information medium remaining. In some cases people are informed about upcoming help by helicopters dropping flyers.

The media passes on rumours and horror stories

At a Federal-Länder crisis session a one voice policy is decided up on in the face of the communication chaos. As of now, only the joint Federal Länder control centre has the right to issue official reports. Several times per day the minister for the interior and the presidents of A and B Länder give joint televised reports. They do, however, admit to organisational difficulties, but the trust in official statements has faded. In contrast, students have set up several websites, on which information and reports based on crowd sourcing have been collected and commented on. Perhaps not every item of news is true, but misinformation is generally recognised as such and deleted. The wealth of detailed information, even for a small local area, is simply unsurpassed. The relevant media recruited their own experts long ago, and they are regularly asked to comment on official statements. Among them are renowned disaster researchers as well as notorious "loose cannons"; the counter-experts explain with deep conviction why everything is going wrong, why all low mountain regions ought to be "written off" and why the meat of dogs that have frozen to death is preferable to that of cats.

The one voice policy fails due to a lack of credibility

Social media distribute "information from the bottom up"

In the media pseudo-experts cause further confusion.

People are closing ranks. In a disaster situation self-help groups and reciprocal support flourishes. People who know each other from clubs pull together to clear important traffic routes. Car hobby mechanics and DIY enthusiasts put cars back into service. It is in smaller towns and communities in particular that people are helping each other, be it with food or a trip to the pharmacy. People living in an area without power but who have a stove heater or a chimney invite neighbours, who are without heating, to their home. Some senior citizens have experienced emergency situations and can still remember how to deal with them; they relied on their own efforts more than on those of others. Most, but not all, younger people lack the experience of improvising. In isolated districts, however, riots are occurring. Emergency teams are being attacked, vehicles carrying supplies are looted and snow-clearing vehicles seized; the cause of these events is the feeling of being left alone by "those up there". Mosque-based associations, church communities etc. are trying to diffuse the situation and help.

Social resilience is built on inter-personal communication

In many places, and especially in village communities and well-to-do residential parts of town, inhabitants are organising themselves. Given that the disaster protection officials have, in their view failed, spontaneous "disaster committees" take over the organisation of relief measures at the beginning of the third week. Depending on location mayors, priests, the head of the fire brigade, surgery managers etc. belong to these committees, as well as other respected and involved citizens. They form groups which take on different tasks. Some are responsible for the distribution of food, warm clothes and fuel, others for clearing snow and recovery. Some people collect information from all available sources and keep inhabitants up to date; others look after single parents or senior citizens who live alone. Years ago some regions set up virtual platforms that led to closer cooperation between the local authorities working in disaster defence and people in the public eye. The platforms are now the hub of well-coordinated mutual help. Helpers who have been recruited on an ad hoc basis function as "messengers" or "reporters". Many of these offer their help on a voluntary basis. The radio and television are now increasingly reporting on the "winter heroes" and make airtime available for operative announcements. Internet platforms have, however, long outstripped them.

On the sidelines of the overstretched official organisation, communication channels are being formed based on the principle of self-organisation

Despite all the efforts from both the emergency teams and citizens, the winter disaster claimed numerous lives, not to mention the economic losses. When temperatures start to gradually rise after three and a half weeks, people are preparing for floods.

Learning as communication for those involved in the future

In the media experts are discussing which lessons can be learnt from the crisis. Pessimists speculate that by the next disaster the lessons will have been forgotten.

How can disasters be "learnt"?

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The complete FÖS (Research Forum on Public Safety and Security) study, „Sicherheit 2025“ (Security 2025), from which the above scenarios have been taken, can be downloaded at [http://www.sicherheit-forschung.de/schriftenreihe/sr\\_v\\_v/sr\\_10.pdf](http://www.sicherheit-forschung.de/schriftenreihe/sr_v_v/sr_10.pdf)



**Subject:** Dealing with uncertainty

**Key message:** People accept risks and live in a “culture of uncertainty”, because it adds to their lives. The culture of uncertainty is defined as the principal credo that human life is based on and as such is the benchmark of uncertainty and the renunciation of the idea of total security. The objective is not to eliminate every uncertainty, but to accept a level of uncertainty that is deemed meaningful. Strategies for coping such as trust, intuition and experience help to distinguish risks and make evaluating them possible. Uncertainty encompasses risks, dangers and challenges and is never definitive; rather it is time and situation- dependent. People decline excessive state protection; they are living an alternative idea to the philosophy “We have to protect our citizens.”

**Background:** People have had enough of putting up with excessive restrictions on their freedom, and having to fund these, all in the name of protecting them from terrorist attacks. This is particularly evident at airports where restrictions, such as the freedom to move around freely, carry certain items as well as the uncertainty about data protection with electronic surveillance systems are felt most strongly. Moreover, airports are increasingly being expanded into shopping centres and experience areas which are disrupted by excessive security measures. Both factors could lead to a noticeable cut back of repressive security measures, perhaps even without a distinct reduction in security.

**Scenario:** *Over the past ten years European airports have changed in some respects, even the big national airport in city X. Despite the taxes on kerosene and carbon dioxide emissions, passenger numbers have once again increased considerably. The airport was therefore extended further into an international hub, and at the same time, the lively shopping scene in and around the terminal buildings was expanded further. The most crucial change, however, affects the change in the security culture. It began here, and at the other European airports, many years ago with the lifting of the ban on carrying liquids in hand luggage; this ultimately fundamentally changed the entire look of airports. These days the airport in city X is an open, friendly experience area with interesting shopping opportunities and many entertainment options for passengers and visitors alike; it goes without saying that it is a gateway to the increasingly interconnected world. Some people even think that the word airport has regained the old magic from its heyday as a result of the reduction of intrusive security measures that were commonplace in the olden days.*

“Airport Cities” are multifunctional

*The real reason for this development is based on an about turn in public opinion that has been in the offing for years and finally influenced politics through political parties extending as far as the European Commission. After years of debates and a host of European Parliament initiatives the “Directive on the flexible dealing with security demands” was finalised. The Member States thus had the option of increased autonomy in making their own decisions with regards to security levels and measures.*

An about turn in public opinion led to the withdrawal of security measures at airports

*As a result it was not only at German airports that security technology was reduced, that there were to be no more scanners, security door systems or video tracking. Gates were freely accessible and security measures were to be implemented in a relaxed and unobtrusive way. Notices such as: “Never leave baggage or personal items unattended at any time as they will be removed and may be destroyed. Any unattended items should be reported to a member of staff immediately” were done away with. Instead, airport employees and notice boards educate people about the purpose of the remaining security measures. The airport operators’ buzzword is transparency – it creates trust. Relatives may now accompany the person travelling to just in front of the boarding gate. The model for airport security is now shopping centres, train stations and amusement parks.*

Looking back, the security measures that were in force at the time transformed the airport in city X into a type of high security wing. A frequent flyer looks back and comments "do you think I used to enjoy that? The long queues at security, especially during peak periods when you're in a hurry. Then there are those fools who decide to take off all five jackets or finish their smoothie at the last minute and hold everything up. Then it's your turn to get ready. You put your laptop in the security tray and are asked 'are you carrying any liquids, Sir?' Take off your shoes. Take off your belt. Empty your pockets. Take off your watch. They used to just about undress you completely! At some European airports there were even body scanners, where everything was on display! I remember well the scandal when pictures of that politician were on the front pages.... Even within the Schengen area there were all sorts of differences. In some places shoes had to be put through the scanner but not in others. And if you were unlucky and the alarm went off, you were frisked anyway. I have colleagues who have a pacemaker or an artificial hip; they had to provide a special certificate. In fact, people with implants weren't able to fly, or should I say, weren't able to deal with airports. An acquaintance of mine is Muslim. At the time, she didn't fly back home because of the scanners. My laptop only had additional special checks on a couple of occasions, supposedly each time it was coincidental. This all takes time and was an unbearable nuisance. The long queues alone would have made a good target for an attack. I have to say, I am not pining for how it used to be."

Airport security used to be a nuisance and violated a person's privacy

With further probing on the dangers, it becomes clear that most airport visitors and passengers accept uncertainty simply as a part of human life and that has to be dealt with in some way. The typical response is "a terrorist attack? Yes, it's possible but it is so rare. I read somewhere that the drive to the airport was the most dangerous part of a journey by plane. Being involved in a road accident on the way to the airport is far more likely than your plane crashing." Some people even joke, "It is well-known that most people die at home in bed." Even Mark Twain already established that ...

In a realistic risk evaluation terrorism does not score very highly

It did, however, take a very long time for people to change their opinion. For a long time the feeling remained that flying was in some way particularly dangerous because you would fall a long way and a crash was more likely to be fatal than a train accident. When they wanted to start aligning the security measures at train stations to those at airports a rethink began. The first body scanner at Cologne's main train station was the last straw.

Politicians were prepared for the population's changed perception of risk. It guaranteed a certain "basic security", yet at the same time made clear that absolute security was neither possible nor that it could be an objective. For a highly developed country that is strongly networked and oriented towards international markets there are bound to be risks that cannot be perfectly controlled. It is worth accepting these, because in return there can be greater personal freedoms and the economy also benefits.

Politics guarantees basic security

One passenger says "You know, I travel by plane nearly every week," as she wanders to the gate pulling her black hand-luggage suitcase behind her. She continues, "Firstly, I can't allow myself to be afraid of flying, or terrorists for that matter, and secondly, the worst thing that can really happen, and it happens all too frequently, is a cancellation or a delay and you have to hang around for hours, you end up buying unnecessary things or working in the lounge as if you were at the office. However, in my opinion there are far too many non-flyers roaming around at airports. I can understand that some parents want to take their kids to the gate, but why don't the [window] shoppers just go to a normal shopping centre? It hasn't really been any cheaper at airports for a long time. All right, they are probably attracted by the feeling of being connected to the big wide world."

Airline passengers have other concerns than terrorism

The "basic security" that has been vaunted by politicians is guaranteed at airports by depersonalised technologies and by plainclothes police officers. However, the authorities don't make public how many plainclothes policemen and women are deployed or how many are among visitors in the airport buildings. Every now and again a uniformed police officer circulates with a sniffer dog, if only for psychological reasons. Airport visitors should be aware that their security is being looked after yet the police are mainly called to chase shoplifters or pickpockets. Their number has increased considerably since the opening of airports.

Every now and again security ought to be visible

One sales lady admits "you do have to be vigilant; I have worked at the tie shop 'Schlips & Schleife' for five years, the wage is better than in the centre anyway. It is the loss through theft that is really a problem for us. Despite the electronic labels and all sorts of other security measures, goods disappear time and again. It's not as bad for those at the 'Luggage Shop'. Suitcases are bigger than ties and scarves; you can't just pocket one so easily.... My friend who works in the cosmetics department has even more reason to complain. We suspect gangs of youths; but it is all too rare that they get caught. And that's even despite the traders' association having employed private detectives."

There are the same problems as in shopping centres, ranging from theft ...

Officials view a fire with severe smoke development- and the mass panic that could break out as a result - as the biggest security problem. This is the reason for the creation of generous access routes that enable a speedy evacuation and intervention of the special services in the case of an emergency. An intelligent guidance system would inform people via mobile phones, if necessary, and would guide them out of the danger zone. Should mobile phones, electronic notice boards and loudspeakers fail, conventional signs would enable an efficient evacuation.

to fire protection and ...

The electronic surveillance system that is used is for the most part invisible to airport visitors. Depersonalised sensor technologies follow the flow of visitors in the airport as an early warning system to detect dangers in areas of high traffic. They are, for example, able to independently recognise a collective move to escape or areas where bottlenecks are just starting to form by measuring distributed events and aggregating these to an automatic evaluation which will provide a warning in the case of danger. These systems are primarily for managing the stream of visitors rather than defending against terrorist attacks. Terrorist attacks have been thought about though; a highly sophisticated chemical sensory function, based on the principle of a sniffer dog's nose, uses nanoparticles and is able to recognise most explosives from a distance with the help of minimal gas emissions. The measures are only marginally different from those in place in shopping or activity centres.

the management of the flow of people

The authorities in the security control centre are proud of the new philosophy of security and are happy with their new duties. Some of them remember well the time when they were working at the security gates. One of them says "it wasn't exactly a barrel of laughs for us either." The duty officer comments "Today we have a highly developed and adapted security culture. Multiple studies at European and American airports prove that de facto there is more security today than there was in the past, despite fewer employees on duty and despite the removal of the security gates and scanners. The sheer quantity of surveillance used to stand in the way of its quality. Everyone and anyone was haphazardly checked – everyone was basically considered to be suspicious. The really dangerous people hardly ever stood out from the crowd, as long as they were not stupid enough to wander through the scanners carrying a gun or explosives. We even had to confiscate lighters These days our colleagues have a very well-developed sense for the sources of threats and who might pose a threat. The 'Trusted Travellers' can go straight through the automated biometric checks and don't have to wait any more. Our employees don't just randomly 'frisk' anyone; they have acquired a sharp eye for anything unusual. You can't really call it profiling; that sounds far too much like exclusion and discrimination. Rather we are far more conscious, at the different points of contact with passengers, about who we are dealing with. Engaging in dialogue with airline passengers also increases trust in the work we do. This means that there are fewer false alarms, fewer false suspicions and greater concentration on the really critical points. I can't discuss any details. But believe me, my people recognised you immediately as a slightly nervous journalist... Of course we cannot guarantee absolute security any more today than we could in the past. It simply doesn't exist - at any price."

Efficiency means focus and quality, not quantity

Psychologists offer complicated explanations for the marginally changed attitude of passengers and employees towards the dangers for life and limb. A psychologist, who works in the airport's security control centre and is responsible for supporting traumatised people in an emergency, explains the connection: "Our guests are more concerned with completely different personal risks and dangers such as losing their job, health risks, and relationship problems. Questions about security only attract attention when people can establish a link to their daily fears. Let's take the example of the entirely plausible risk of an asteroid hitting earth. It is completely abstract and detached from all experience - it therefore remains a consequence-free speculation. The danger of a terrorist attack that could affect us is of secondary importance in the life of an airport visitor,

The perception of risk is characterised by the connection to everyday life

just like the fear of flying. When people are shopping or waiting to board, the experience and their own journey become the focus of their attention. The airport, as a space, is perceived by nearly all those questioned in a survey as being emotionally positive and is not associated with fear and worry – at least not any more than a train station.

According to the psychologist, people perceive dangers differently and have different “coping mechanisms,” methods of dealing with danger. Some rely on abstract risk evaluations (“we know that driving a car is more dangerous”) and others suppress potential dangers. Some believe, frequently somewhat esoterically, themselves to be more or less immune to such risks, the belief being “Nothing has ever happened to me and nothing can happen to me.” Depending on the cultural region that they or their ancestors come from, they might wear a little chain with a cross, a St. Christopher’s medal, a traditional alpine “Augenstein” pendant or have some other type of lucky charm. When asked, only very few would claim that the lucky charm actually protected them – but they feel better wearing it. The psychologist says that “the danger still exists, but via emotionally orientated strategies of dealing with it, a feeling of control is experienced.” In simple language: don’t panic! Before I start cancelling my flight I should check my own view on the situation. I should form my own notion of the danger, I need to listen to my friends and neighbours and find out more using face time. I trust this information and I am capable of acting.

Individual coping mechanisms are based on emotion, intuition and what has been socially embedded

The new clarified attitude to uncertainty is proven especially when something does actually happen such as a recent terrorist attack on an Asian airport that claimed dozens of lives. Near the queue in front of the security area a suicide bomber lit an explosive belt he was wearing. The event naturally made big headlines in the media and the question was asked yet again: could this not happen here as well? What is being done about it? Do we and do the experts have to re-evaluate the dangers? Are we really putting effective measures in place?

For a period the public was more aware about the threat level. Some of the media, and individual politicians in particular quickly called for further security measures, more stringent surveillance, a return to the old “proven” apparently “watertight” counter-terrorism system. However, these demands hardly resonated with the public; they remembered only too well the restrictions on personal freedoms that had been connected to the old system. It was quite easy to follow the prevailing mood in blogs, tweets and social media in general. Some people were shouting for more control and surveillance here as well – close the borders, don’t let anybody in who might be in any way suspicious! Yet the notorious rabble-rousers remained largely unsuccessful as the exaggerated demands very quickly turned into a subject of discussion in the internet community. The strident and exaggerated demands were clearly rejected by most of the web community. Sporadically, online petitions were quickly started against the emerging obsession with security, politicians’ websites and mass newspapers were hacked, and a flash mob with the message “my freedom belongs to me,” was started.

Relapses into the old scare-mongering are recognised and countered

The primary “new measure” against the threat of terror is to pay the crazy people as little attention as possible, not to be impressed, not to invest millions in measures that are not very effective, not to allow terrorists to dictate the laws! A visit to the airport in city X demonstrates that society has learnt to deal with risks and dangers and to accept uncertainty as a benchmark of human life.

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