SVRV Sachverständigenrat für Verbraucherfragen

Consumers in the Digital World

Executive Summaries of Briefing Papers

January 2016

Berlin, 19 January 2016

Published by the
Advisory Council for Consumer Affairs
at the Federal Ministry of Justice and Consumer Protection
Mohrenstraße 37
10117 Berlin

Tel.: +49 30 18 580-0
Fax: +49 30 18 580-9525
Email: info@svr-verbraucherfragen.de
Web: http://www.svr-verbraucherfragen.de

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Opportunities and risks of payment transactions under a digital agenda

Payment transactions have a key role to play in economic activity today (payment transactions being the transmission of money from the control of one economic agent to that of another). They predominate in the business models of all the relevant providers as well as in the everyday lives of most citizens. Payment transactions form the **backbone**, as it were, **of our networked, collaborative and transnational economy and society**. It is not surprising, then, that in the course of the debate on "the digital world and finance" the focus is now being placed ever more frequently, more intensively and more controversially on developments in regard to digital payment transactions, despite the fact that in many western industrial nations digitalisation in this field of the financial sector goes as far back as the 1980s.

There are three basic **types of payment systems** (in the B2C market): stationary, internet and mobile payment systems. It is only at first glance that the first of these stands for payment systems in the analogue world, as the digital processing of a non-cash payment transaction (bank transfer, direct debit, card payment) and the different types of self-service are often no longer regarded as a form of digitalisation. The two other types (internet and mobile payment systems), by contrast, are often considered to be prototypical for the digitalisation of payment transactions.

Progressive digitalisation and its meshing with analogue processes is now enabling **non-banks** to combine their core business fields (trade, information, communication) with the traditional business field of (bank) payment transactions. Non-banks offering these payment services are these days often referred to as **FinTech** (financial services and technology). These are not just start-ups, but can also be both internationally active information, trading and telecommunications companies, such as Amazon or Google, Apple or Samsung, which (want to) add a new strategic field of business to their core fields of information, communication or trade.

Deutsche Bundesbank has concluded that data-based payment transaction technologies and services may in fact make lots of things easier, but they also involve risks which are difficult for each of us to assess. The use of different types of mobile terminals, for example, is generating ever-larger volumes of data, some of which include sensitive personal data, which are processed and analysed in different ways. Few can keep track of what is being done with their data. That is why people are wary of disclosing personal information, and this vague unease often becomes very definite when it comes to financial data.

The **necessary condition** for the opportunities presented by innovative concepts to be identified and taken advantage of **is full transparency**. But what is even more important is the **sufficient condition** of **high-quality** information that it is not simply made transparent anywhere and anyhow (see below).

Due to its topical nature, the regulatory environment for implementing the EU's **Payment Accounts Directive** into German law is currently also a matter for debate. This is a key issue when it comes to the opportunities and risks these innovative payment services present as well as when it comes to their acceptance, amongst other things because **payment accounts** represent the main point of access, the **key to payment transactions,** as it were.

However, when it comes to realising the underlying idea of improving the transparency of information concerning payment account fees, account needs to be taken of the same consumer requirements as were previously considered in regard to other financial products. Beyond this necessary condition, **high-quality, up-to-the-minute information** is nevertheless still not yet available – in the same way as product information in the field of consumer finance is still not regulated – although it could, for instance, be guaranteed via **standardised specifications** made of providers and users in finance and commerce or payment services which are regularly **scrutinised** so that potential users can **easily, comprehensibly and comparably** analyse them.

So that the planned websites for comparing conditions in the aforementioned sense are actually suitable and the required market confidence can be generated, compliance with key requirements as regards identification, transparency, verification, relevance and usefulness must be safeguarded. Further, regular supervisory **controls** should be carried out and **verifiably** documented (with a reversal of the burden of proof).

Neither the EU Payment Services Directive II (PSD2) nor the Payment Accounts Directive (PAD) nor the current ministerial draft bill to implement them both into German law contains any minimum requirements which would actually enable various groups of citizens to find clear, simple and comprehensible high-quality information about payment accounts and payment services which actually puts them in the position as (potential) customers to critically analyse financial products themselves, given that they are now able to use and assess the available information (type and function, risks, costs).

Opportunities and risks of digital advice and information

Due to the **complexity of financial information and decision-making situations**, consumers often need a great deal of information so as to be able to both analyse their own current and future economic and financial situation and to find potential solutions to their problems. Given these high information needs and the little financial security their accumulated assets afford, most will be dependent on high-quality exploration, information and recommendations. In this context "high-quality" primarily means finding the information needed based on individual know-how, experience (skills) and needs. In practice, customers generally experience information and choice overload in consultancy situations.

A key advantage of **digital advice** is that it can generally deliver the information consumers need for **self-exploration** and **self-information** in a solution- and target

group-oriented manner via the access channel which is most appropriate for them (internet, app, social media). These two facets of the consultancy situation can, therefore, at least in part, be a substitute for the **"how"** (know your customer) and possibly even the **"what"** (know your product) of a stationary, analogue situation. In addition, the **analogue world of consulting has long since become digitalised**, from recording personal data on the advisor's desktop or laptop, to the electronic transmission of product information, to standardised recommendations based on the relevant algorithms. Progressive digitalisation and its meshing with analogue processes is also enabling **non-banks** or innovative start-ups known as **FinTechs** to establish their core business fields along the financial advice value chain.

Different types of digital advice systems are used as business models (in the B2C market), including fully automatic asset management, consultant-supported asset management, social trading, as well as cross-product and product-specific comparison portals.

The boundaries between stationary consulting systems and digital advice variants have already become blurred. This is down, on the one hand, to there being only a few access options and to the limited number of elements in the process (exploration, information, recommendation). The information components (exploration, information), transaction approval and acceleration, and account management aspects currently appear to predominate. The **meshing of digitised offers** whilst **retaining the stationary elements** could prove to be advantageous for citizens as seekers of information and advice if it seems attractive to use only a few tools to reach multiple options, that is **omni-channel flexibility**.

The forms and business models in the field of digital financial advice show that even when consumers engage in **self-exploration** and/or **self-information** at least some of the time, a specific **type of recommendation** often follows which – although sometimes in rudimentary and standardised form – is supposed to match the data the customer has actively or passively entered in relation to his or her situation, goals and reasons for seeking the advice. In this respect the legal framework should in principle be applicable to digital financial advice, but in a systematic, structured, standardised and comparable form, not in today's still fragmentary and over-regulated mode – and it should apply to analogue and digital forms in equal measure.

Digital financial advice, including self-exploration, self-information and modular, standardised recommendations, shows basic potential, especially when it comes to actually **getting people interested in** looking at their personal finances, proactively getting them to **take a closer interest** in their own finances, or providing initial information and potentially comparing information and recommendations prior to key financial decisions.

The two topics of **security** and **data protection** should be given the highest priority in order to gain, maintain and develop citizens' trust. Consumers either willingly or unintentionally, often unconsciously, enter personal data which third parties, for example the owners of the business models applied by companies in the service-providing economy or decision-makers in government agencies, can and want to

exploit. These personal data often have institutional, social and/or economic value, since all the players, including consumers in principle, should be able to use them individually or collectively as a subject of negotiation. The decisive factor for citizens here appears to be how easily, comprehensibly and clearly they can recognise that they are paying for the offers they are using with their **personal data** (including on account of them being passed on to third parties) and whether, if they refuse to consent, they have options other than not using the service at all to avoid this as well as alternatives for deleting their data. That includes simple, clear and readily comprehensible **labelling** regarding the extent to which personal data are (to be) used for direct or indirect personal, geographical and technology-dependent (e.g. depending on the access/device used) price differentiation. The same goes for the labelling of (IT) **security**, including a declaration of the anticipated and obligatory involvement of the payer or the person seeking information or advice.

The financial sector can be regarded as prototypical for the advancing digitalisation of the business models of service providers whose products directly and existentially affect or have an indirect bearing on the basic and additional financial needs of most citizens. These developments can, after a certain time lag, be traced in **commerce** and, more recently, in the field of **health** and **mobility**, too, with comparable (potential) structural changes.

A few important questions require further discussion:

- What consequences is the ever-advancing digitalisation of self-exploration, self-information and self-recommendation having on **increasingly time-pressed** citizens?
- Are these increasing time demands in the increasingly self-service analogue and digital world leading to **changed risk/yield splitting**, for example in that citizens are themselves having to seek out, acquire and understand more and more key information “at their own expense” and under their own authority and are at the same time themselves having to bear more and more of the resulting consequences, especially when it comes to material goods and services based on trust (reduction of liability) which they already find hard to assess?

2. The digital world and health: E-health and m-health – opportunities and risks of digitalisation in the health sector

Today, health-related decisions are no longer only taken in the traditional core field of health care, but also when it comes to individual lifestyles and health maintenance (e.g. diet, exercise and living environment). The increasing number of health care services which are more reminiscent of market services (individual health care services, or IGeL, supplementary insurance) means that consumers are having to take on more and more responsibility for themselves. They are purportedly acting as "buyers of different services on offer" on what are known as "health markets". Accordingly, health care services – in the broadest sense – are to be negotiated like on a marketplace. There is one key difference, though: "Health" should primarily be about "public health", that is a social commodity, not about individual economic gains or other interests.

Digitalisation in the health sector is essentially understood to comprise e-health (i.e. the use of electronic devices in health care and other tasks in the health care system), m-health (the provision of mobile e-health solutions) and tele-medicine (the reserve of health care professionals). The latter will not be discussed here.

Progressive digitalisation means it is now easier to find comprehensive information quickly, to share information with others or with providers (e.g. health insurance companies, doctors, insurance companies, hospitals) about illnesses and treatment options, and to evaluate doctors and care and rehabilitation facilities. Besides this "primary market" – a densely regulated system of statutory health insurance schemes and health care – particular importance is also attached to the secondary health care market, which is developing rapidly but is still hardly regulated. Portable devices used to analyse bodily functions such as pulse, sleep, blood sugar, blood pressure or number of steps taken have already opened up a new dimension in self-measurement. Physical and mental health data are collected, stored and analysed after being generated covertly in items of clothing (wearables, smart clothes) or by wristbands and smartwatches. Scientific insights are hardly ever incorporated into their development, and yet they have great commercial potential. Whilst users are animated by means of playful incentives to use the technology as frequently as possible, firms are working on developing business models with which to commercially exploit the recorded data. The market leader, Fitbit, for instance, is openly advertising smart, health data-driven insurances and is already cooperating with many firms in which it is running workplace health programmes.

Issues such as personalised offers, information and structural asymmetries, as well as the "privacy paradox" (see the e-commerce briefing paper) can be transferred to health in the same way as issues such as data protection and (IT) security can be transferred from the digital world of finance. On the other hand, digitalisation in the health sector has by no means progressed as far as it has, for example, in the field of financial services. Whilst precautions may have been taken to ensure that the few data which are currently stored on electronic health insurance cards are secured, the same cannot be said when it comes to the health-related data derived from wearables and smartphones, for instance.

Digitalisation not only brings with it new opportunities and risks, but also the chance to minimise or even solve the age-old problems inherent in the health system which are prejudicial to consumers. These include the lack of patient safety, over-treatment and unjustified variation in the quality of health care provision. In Germany, for instance, an estimated up to 20,000 patients die each year from the consequences of avoidable hospital errors, and over-treatment may have led to between 11 and 16 billion euros of unnecessary expenditure by statutory health insurances in 2014.

At this point of intersection between old, persistent and expensive problems for health-conscious or sick consumers and new, rapidly developing technologies we have attempted to assess what opportunities and risks digitalisation presents for consumers. We asked the following questions as part of our analysis:

- What opportunities arise on account of digitalisation in regard to those core issues of concern to consumers (lack of patient safety, over-treatment and unjustified variation in the quality of health care provision) which exist in the analogue health system?
- What opportunities and risks arise for healthy consumers on account of new self-measurement technologies (e.g. wearables or implants)?
- What opportunities and risks result from the digital collection and analysis of large quantities of health-related data ("big data")?
- What opportunities result when it comes to improving consumers' knowledge about health and thus improving public health awareness?

These questions can be raised both in relation to the traditional health care sector and what is termed the secondary health care market. The results of our analysis are as follows:

i. Digitalisation offers opportunities for solving problems which have hitherto had a negative impact on consumer health in the analogue world. Firstly, patient safety can be improved by means of the networked collection and delivery of patient and treatment information (health care card) and errors can be prevented. However, issues such as data protection need to be considered from the patient's perspective. An established digital security culture with error reporting systems in medical facilities and digital treatment planning in outpatient care can also increase patient safety. Attention must here be paid to the fact that the complexity of digital systems can also increase the risk of system malfunctions. Secondly, over-diagnosis and over-treatment can be addressed through digitalisation, in that digitally communicated scientific evidence on medical offers can deliver transparent information to consumers about their potential benefits and consequential damage. The doctor-patient relationship will change as a result: Doctors will have to justify their prescriptions and suggested treatments to well-informed patients. Ideally, this can help prevent unnecessary treatments and therapies.

ii. New self-measurement technologies (apps, wearables) can hold the potential for creating a continuous, very detailed image of each individual. Each time a specific upper limit is exceeded, this can be recognised and preventive

behavioural changes made at any early stage without the patient having to visit the doctor's surgery. There are, however, risks: Not only do the readings have to be reliably taken, but their implications also need to be understood. In particular, users need to be able to gauge the frequency of false alarms and random variations in the readings. This can lead to unnecessary anxiety in those who do not have the necessary skills and, in consequence, pressure on the primary health care system on account of over-diagnosis and over-treatment. Further, consumers are often unable to see which health-related data are being collected by whom for what purpose and with which other data they are being combined.

iii. The collection and analysis of health-related data at the level of big data analyses offer the potential to generate new hypotheses about causal links, to follow up pathogeneses at the public health level, to identify systemic fraud for which consumers are asked to foot the bill, as well as to characterise specific cases and prepare personalised treatment options. There is the potential for data misuse and this is closely linked to the question of access rights and data security.

iv. The planned participation of patients means that consumers need the skills envisaged on account of digitalising the health care system. Reliable sources could make transparent, comprehensible, device-independent information about specific health care offers widely available. However, consumers would have to be able to distinguish between reliable sources and the wealth of interest-driven and often misleading information available on the internet. There is a risk that digital information will, more specifically, not reach those consumers who are hard to reach via institutionalised education and that these are placed at a disadvantage in the long run as a result.

The opportunities which digitalisation opens up cannot be realised before two conditions have been put in place which have so far been implemented only in part, namely delivering transparent and reliable (evidence-based) consumer information and building consumers' everyday life skills. We would like to make the following recommendations in this regard:

1. **Clearly label and deliver reliable and transparent health information by means of e-health and m-health**

Many consumers are still at a loss as to where to find reliable digital health information. This information is currently scattered widely across the internet (e.g. in Germany on websites such as gesundheitsinformation.de, operated by the Institute for Quality and Efficiency in Health Care (IQWIG), and igel-monitor.de), but many consumers are unable to find it given the overabundance of websites. Digitalisation offers the opportunity to solve this problem. We recommend that the Government set up a (small) institute tasked with finding ways to publicise these reliable sources to the wider public using digital technologies such as social media. This could be achieved within two to four years and supported by what are known as "fact boxes",

as provided for under section 3507 of the US Patient Protection and Affordable Care Act (2010) and as available on aok.de in Germany. This information could be given a quality label (e.g. issued by the IQWIG).

2. **Improve consumers' digital literacy**

The opportunities inherent in digitalisation will be squandered if consumers' digital literacy is not improved in parallel. Consumers need educational offers on various levels. Firstly, consumers' health skills should be improved. Studies by the Max Planck Institute for Human Development show consistently that consumers in Germany do not have sufficient digital literacy skills and lag behind in an international comparison. Unless their digital literacy is improved, consumers will not be in a position to distinguish between products which are useless or even harmful to health on the one hand and quality-assured offers on the other, especially on the secondary health care market. Secondly, the skills needed to handle one's own and others' data need to be acquired and routines for dealing with digital offers in everyday life need to be developed.

To do that, offers need to be developed for all consumer groups across their entire lifecycle – from early childhood to adult education. Capacity building is the key to self-determination. Consumer education can and must not stand alone, but needs a regulatory framework so that customers do not end up being overwhelmed.

3. **Take data protection seriously**

It is obvious that health data are extremely sensitive and need to be rigorously protected ("big data"). The purpose of and the criteria applied by algorithms should be made transparent where they are used in decision-making processes, for example selecting a treatment or therapy. Only then will the patients concerned be in a position to object. When using online services, wearables, smartphones and other digital devices consumers should have the right to know who is exploiting their health data. Further, the terminals' privacy and data protection settings should be consumer-friendly. Statutory health insurance schemes, which operate on the principle of solidarity, are currently prohibited from discriminating against individual insured persons and patients on the basis of big data, and care should be taken to ensure that the principle of solidarity continues to apply going forward and that it does not give way to individualisation on account of big data.

3. The digital world and commerce: Consumers in personalised e-commerce

Trade, be it stationary or online, represents the key intersection between demand and supply. Like most other branches of industry, trade is undergoing dynamic structural changes. Analogue and digital trade are closely dovetailed; the various sales channels complement, in some cases substitute, each other. Digitalisation is changing the entire process of consumption, from generating a need, to information searches, to choosing a product, and finally to buying and reselling that product. Online shopping has become so attractive that e-commerce is now a growth market. Compared to the stationary business, which is growing only slowly or even stagnating, e-commerce has for some years now been registering two-digit growth rates and, according to estimates, will generate total revenue across all branches of industry of just under 44 billion euros in 2015.

The spread of mobile devices such as smartphones and tablets across all sections of society is also increasing the market share of mobile shopping (m-commerce), or at least when it comes to searching and finding information via these channels at the point of sale. For providers, “everywhere commerce” means that they can address consumers in a targeted fashion 24/7. Consumer demands are increasing as a result: Since consumers carry the multiple technical possibilities of shopping online and easy payment around with them everywhere, in the guise of their smartphones, they also expect to be able to use them anytime, anywhere. The opportunities for suppliers and demanders to engage in two-way communication offer new forms of and forums for giving feedback on customer satisfaction and requirements, quality assurance, as well as customer loyalty options. Person- and situation-specific offers are important elements of this customer loyalty.

Each personalised offer is based on personal data – more than just socio-demographic features, but also locational and movement data, current and former preferences, as well as values, lifestyles and behaviours. Data are generated, collected, analysed, marketed and networked across all the phases of the consumption process. What is new are the options available for processing large quantities of data and also being able to link and analyse them with other data generated outside of consumption processes. Big data makes it possible for providers to know their customers “better than they know themselves” and to be able to gauge their interests and requirements, to generate needs and desires. They can thus reach consumers round the clock and offer them pre-selected products and personalised pricing – opening up a new dimension in target group-specific communication and customer loyalty for retailers.

The question arises, from the consumer’s perspective, of what opportunities and risks this development will give rise to. The opportunities are immediately tangible, the risks, though, are often hidden and tend to become visible only in the long term.

Freedom of choice and flexibility: The internet and e-commerce give consumers more freedom of choice, both in terms of having a broader, practically unlimited selection of goods and more (international) suppliers to choose from. They can also make their purchases whenever it suits them. However, the extent to which these

advantages can be sustained in the long run is still an open question, because the more customer data are being analysed automatically and used in algorithm-based profiles, the more providers can control the offers they make. The short-term advantage could thus turn into a long-term lack of freedom which may not only have an impact on individual consumers but also on society as a whole.

Competition and market power: Two opposing trends in e-commerce can be made out: Basically, it can be assumed that competition amongst providers will increase, since the barriers to market entry for new providers, innovative business models and start-ups are low and the markets are cross-border in nature. In addition, the numerous product information, assessment and comparison portals reduce the search and transaction costs on the demander side and thus promote competition. Nonetheless, these portals are by no means as independent and credible as is implied and they are at least in part provider-driven and thus only suited to a limited degree to delivering the information consumers are actually searching for. Further, the supply side is very much ahead of the game due to it having very specific knowledge about trading partners thanks to the broad data basis at its disposal. If data have become the digital world's "currency" and these data are used by the supply side, this suggests that the two sides are far from being on an equal footing. In fact, the information and power asymmetry in regard to key resources rather appears to be widening.

Personalised offers and prices: From the providers' perspective, e-commerce consumers are getting harder and harder to communicate with and less and less "accessible" on account of their being able to consume anytime, anywhere via diverse channels. This is also why greater emphasis is being placed on personalised marketing. For many consumers, personalised, precise, pre-selected offers reduce the complexity of choice – a welcome phenomenon. However, personal price differentiation is problematical. An empirical study commissioned by the Advisory Council covering several branches of industry came to the conclusion, though, that personalised price differentiation is (still) rare in e-commerce in Germany – in particular on account of companies setting other priorities, the lack of technical infrastructure, lack of economic profit and their fearing a loss of consumer confidence given that consumers in Germany tend to value data protection fairly highly. Once these barriers have dropped, this reticence will no doubt also disappear. The foundations for this scenario are already being laid thanks to the collection of masses of data and analysis of consumer behaviour. The consequences of discrimination based on personalised offers, especially in such important areas of consumption as finance, health, insurance or the world of work, are already in evidence today.

The privacy paradox: The majority of consumers fear that their data are not safe on the internet, when they are shopping online and especially when they are paying online. According to the DsiN-Index 2015, the gap between the actual "threat scenario" and the subjective feeling of insecurity is widening. Likewise, the gap between knowledge about safe payment systems and how to use them is also growing. This "privacy paradox" – the disconnect between safety concerns on the one hand and fully revealing personal data on the other hand – thus also applies to

e-commerce. Against the backdrop of digital irreversibility, it is still hard for consumers to delete data once they have been entered or revoke entries once they have been made.

Transparency and democracy: There is largely no transparency regarding who is collecting which consumption-related and other data from whom and how these are exploited, interpreted and passed on to third parties. Data processing and networking occurs in the background using complex algorithms which most are ignorant of and which even developers and users hardly understand. Thus the construct of individual "consent" to the use of one's data when completing a purchase only seemingly provides any protection. Consent presupposes voluntariness, that the user has understood the contract terms and that transparency exists regarding the possible consequences of giving one's consent. However, these conditions appear to be fulfilled only to a very limited degree. What today is still classed as harmless information may, in a later context, lead to discrimination, exclusion and stigmatisation. Since the data are analysed in the background, when consumers do an internet or product search they cannot tell whether the products, the price and the proffered payment options represent an individualised result. The fact that general information as well as political content and opinions are pre-selected is of much greater social relevance than its commercial exploitation. There is potential for misuse here, which could ultimately jeopardise an open and informed democratic debate.

Against this background, this paper proposes and details the following specifications for a consumer-related internet policy in regard to e-commerce:

1. *Strong regulatory framework – no individualisation of responsibility*

   Consumer policy instruments should be adapted to the digital world; consumer responsibility should only be called in where reasonable; a clear framework and regulation is needed where individual competence is not enough.

2. *Simplify and reduce the burden placed on consumers – no disenfranchisement*

   E-commerce should be made transparent and attractive; consumer-friendly technology with security defaults should be used and data avoided wherever possible; consent and opt-out options should be supported by means of data protection-friendly default settings.

3. *Build capacities and strengthen consumers – without overwhelming them*

   All consumer and age groups should be able to participate; digital media skills are a consumer education task; alternative forms of learning such as citizen workshops should be created.

4. *Increase transparency – not more but better quality information*

   Information should be accessed via one's own profile; independent, valid assessment and comparison portals should be safeguarded; data tracks must be visible.

5. *Secure access for all – more competition on the internet*

   Competition authorities must promote broad-based competition on the internet.

6. *Joint responsibility – society also has a role to play*

   Voluntary standards and industry solutions should be available where they are sensible additions to government-imposed minimum requirements; the state should regulate the requirements made in terms of standard setting and enforcement; digital civil society and consumer organisations should actively participate when it comes to setting standards and scrutiny.

N.B.:

The supporting evidence can be found in the briefing papers presented by the Advisory Council for Consumer Affairs entitled “The digital world and finance: Payment services and financial advice under a digital agenda”, “The digital world and health: E-health and m-health – opportunities and risks of digitalisation in the health sector” and “The digital world and commerce: Consumers in personalised e-commerce”.