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A short compendium to data
protection and data security
issues regarding BYOD

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1. Executive Summary

Bring your own Device (BYOD) is an important trend in IT-industry. BYOD refers to the practice of employees collecting, processing (including, but not limited to storing) or using corporate (company) data on their privately owned ICT devices. The model may increase both efficiency and output of employees and has important advantages; however, each company's individual requirements and business environment demand thorough evaluation to determine whether or not BYOD is a usable tool for cost reduction and whether or not the advantages outbalance the challenges. From a legal perspective it is of particular importance to recognise that also in BYOD environments the employer exclusively remains fully liable for all job-related data processing on private devices of employees. Consequently, the level and effectiveness of data security measures need to be maintained on the same high level regardless of whether or not data processing is carried out on company owned or privately owned devices. This causes significant challenges in prac-

tice which require precise and comprehensive legal agreements with employees as well as thought-through and state-of-the-art technical implementation.

Whereas legal compliance of BYOD can be achieved by taking the right steps, it should always be considered whether or not the option to provide employees with company owned devices (which may be used privately as well, and which, in addition, may be chosen freely by the employees within certain boundaries¹) would not constitute a significantly easier model combining the advantages of BYOD with the safety of full technical and a better legal control of these devices. In total, a BYOD model must be thoroughly adopted to the company's business model and processes within the IT-infrastructure, in particular regarding hardware and software ownership and maintenance (licensing), data ownership (personnel data / IPTs), IT Security policy, data security and liability.

¹ This requires consideration of the hardware / software configuration management of the company, the software licensing models with particular regard to (possible) private use and licence management patching.

2. Introduction

„Bring your own Device“ refers to the practice of allowing employees to process company data on private (mobile) devices (usually, but not necessarily connected to the company's IT infrastructure) in fulfilment of their contractual obligations. The two characteristic elements hence are:

- the ownership of and hence principal governance over the device by the employee (as opposed to the regular set-up in which the employer exclusively governs and in many cases² also owns the IT-infrastructure alone); and
- the use of such private devices for professional tasks on behalf of the employer³.

The major incentives for companies to allow BYOD practices appear to be that better job satisfaction of the employees and efficiency of their work might be expected, by taking profit from the fact that the employees are well familiar with their own devices⁴.

There are, however, significant legal (and technical) issues to solve for making BYOD practices legally compliant. The major legal issues can be found in

- data protection law and data security law (including telecommunications law)
- copyright law
- Civil law (labour law and liability)

While the compendium at hand discusses all three of the above, the vast majority of serious legal issues is rooted in data security law, which itself is closely related to data protection law. Consequently, the primary focus of this document lies in these two fields.

The following guidelines address decision makers and policy makers in the field of ICT as well as senior executives and management responsible for corporate IT-related issues.

² Cases in which the employer does not own the hardware are e.g. leasing models.

³ Burkhardt Göpfert, Elena Wilke: „Nutzung privater Smartphones für dienstliche Zwecke“ NZA 2012, 765.

⁴ BITKOM, „Private Smartphones werden für den Job genutzt“, http://www.bitkom.org/73623_73615.aspx.

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Using these guidelines, hence, does not require particular legal foreknowledge beyond a basic understanding of legal reasoning. The present compendium seeks to give an **overview** of the most relevant legal issues related to BYOD, while also providing legal solutions and advice on Good Practice and Policy Implementation.

Consequently, these guidelines will follow mainly a two-stage structure. On a first stage, the document at hand seeks to briefly **explain** the major outlines of existing legal sources in their particular conjunction (legal framework) on a theoretical level, to allow the reader to understand the origin of legal issues around BYOD practices without particular knowledge of IT law and related jurisdiction both on the European and the Domestic (German) level.

On a second stage, the most relevant legal issues deriving from the given legal framework shall be introduced and expounded, to provide, subsequently, **suggestions for solutions and handling in practice**.

Naturally, both the legal framework and the deriving legal issues in their entirety are fairly complex. As a result, guidelines for IT practice will always need to seek for a balance between depth and detail on the one hand, and usability and efficiency on the other hand. To comply with these antagonistic requirements, the compendium at hand has been designed to focus on the typology of major legal issues usually involved with BYOD practices, while simultaneously providing links/references to sources for additional in-depth reading wherever possible und suitable.

3. European and Domestic Legal Framework

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As many other fields of law, ICT law nowadays is strongly influenced by European legislation (and consequently ECJ jurisprudence). Particularly E-Commerce, data protection and telecommunications law have been widely harmonised within the European Union over the last decades, facilitating cross-border trading of services and giving (some) justice to the ubiquitous nature of IP network applications. Consequently, working with the German legal framework for ICT – such as BYOD practices – requires some basic knowledge of both the mechanisms of European law in general and the applicable European regulations and directives in particular. Both shall be briefly introduced in this chapter.

3.1 Relation of European Law and Domestic Law

European Law mainly knows two types of sources of law: regulations and directives. Regulations – as opposed to directives – contain provisions directly applicable in each member state of the EU⁵. Directives, instead, are not directly applicable, but bin-

ding only for the different legislators in each member state, requiring these to transpose the provisions of the directive into domestic law⁶. Obviously, such transposition may differ from member state to member state, reducing the level of harmonisation significantly. Directives, however, form the majority of legal acts on the European level in the ICT-field; regulations remain the exception to this day⁷. All European sources of law are of higher rank than domestic law, hence overriding domestic law where applicable.

However, as directives usually are not directly applicable within the member states, domestic law remains the primary source of law. Its interpretation, nevertheless, has to be carried out in accordance with the higher ranking European sources of law on which it is based, which is why national courts need to refer proceedings to ECJ in that case for preliminary ruling. Equally, jurisdiction of ECJ develops a certain prejudice for future interpretation of domestic law transposing a directive.

⁵ See art. 288 of the treaty on the Functioning of the European Union: “A regulation shall have general application. It shall be binding in its entirety and directly applicable in all Member States.”

⁶ Art. 288 of the treaty on the Functioning of the European Union: “A directive shall be binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods.”

⁷ One prominent example might be the regulation 733/2002 of the European Parliament and of the Council of 22 April 2002 on the implementation of the .eu Top Level Domain.

Consequently, application of domestic law transposing European directives – such as the German Bundesdatenschutzgesetz or German Telekommunikationsgesetz – requires consideration of:

- the European Directive(s) on which it is based;
- the related ECJ Jurisprudence;
- (European administrative acts: decisions and recommendations of the European Commission and related authorities and advisory groups⁸ as appropriate);

as well as of

- domestic (e.g. German) constitution and other domestic law; and
- domestic jurisprudence (e.g. Bundesgerichtshof)
- domestic administrative acts as appropriate (e.g. Datenschutzbehörden des Bundes und der Länder, Bundesnetzagentur, etc.).

3.2 A Short Overview of Relevant Sources of Law

3.2.1 European Law

In the field of BYOD the following European regulations and directives are the most relevant regarding data protection and data security:

- Proposal for a Data Protection Regulation⁹
- Directive **95/46/EC**¹⁰ (Data Protection)
- Directive **2002/58/EC**¹¹ (Privacy in the Electronic Communications Sector)

Regarding questions of liability, the following directives dealing with copyright issues may become relevant as well, if e.g. an employee uses on his device software, which is not licensed for any use other than private use, or if an employee uses certain sharing software, which may remain active also when the device is connected to the company's network:

- Directive **2009/24/EC**¹² (Software) and Directive **96/9/EC**¹³ (Data Bases)

⁸ Such as Art. 29 Working Party or the European Data Protection Supervisor.

⁹ Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the protection of individuals with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation), COM(2012) 11 final.

¹⁰ Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.

¹¹ Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).

- Directive **2004/48/EC**¹⁴ (Copyright Enforcement)

- Directive **2001/29/EC**¹⁵ (InfoSoc)

Finally, the following directive shall be mentioned for reasons of completeness, as it is of high relevance within the entire IT sector (particularly regarding questions of liability: Art. 12 – 15 2000/31/EC), though few issues particularly related to BYOD practice may be addressed by it:

- Directive **2000/31/EC**¹⁶ (Electronic Commerce)

Of the aforementioned the envisaged **Data Protection Regulation** will be of outstanding relevance, as – once in force – it will not only be directly applicable – and hence replace all German and other domestic data protection law –, but may also redefine several fundamental principles of data protection law, should it be adopted as proposed. As, however, adoption may take several years and as, additionally, the final version is likely to significantly deviate from the current draft, the draft regulation currently remains of **subordinate relevance** for

BYOD practice **for the years to come**.

Meanwhile, the most relevant of the aforementioned are the **Data Protection Directive** and the **Directive on Privacy in Electronic Communication**, which together define the European legal framework for data protection and data security law.

3.2.2 German (Domestic) Law

General **data protection law** in Germany has its major source in the **Bundesdatenschutzgesetz** (BDSG - Federal Data Protection Code). The parallel existing **Landesdatenschutzgesetze** of the 16 Federated States (Bundesländer) of Germany are applicable only for administrative bodies and authorities of each particular state, and hence of no relevance for BYOD practice in private economy. BDSG constitutes the German transposition of the directive 95/46/EC.

Data security law as well is rooted within this directive (Art. 17 95/46/EC), which has been transposed by **§ 9 BDSG** and its **annex**. The provisions defining obligations of executives within companies in the diverse

¹² Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs.

¹³ Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases.

¹⁴ Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights.

¹⁵ Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society.

¹⁶ Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market („Directive on electronic commerce“).

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German company laws (Aktiengesetz, GmbH-Gesetz, etc.) are unitarily interpreted to the effect that maintaining and guaranteeing IT-security forms a major responsibility of a company's management, which has to effect implementation and control of suitable rules and guidelines, and install – if appropriate – an IT security department and / or CERT.

Moreover, particular rules for data protection and data security apply for telecommunication services (e.g. email) and telemedia services (mainly web sites and services). These are §§ 88-107 **Telekommunikationsgesetz** (TKG) in the former case, and §§ 11 - 15a **Telemediengesetz** (TMG) in the latter case. The provisions of TKG referred to above contain among others the German transposition of the **2002/58/EC**; the TMG incorporates parts of directive 2000/31/EC.

Additional rules on data security may be found in the federal law on the federal office for information security (BSI-Gesetz). For example, art. 2 (2) of this law provides a definition of information security¹⁷. The

law on a specific E-mail-Service called "De-Mail" (De-Mail-Gesetz) includes very detailed and specific norms on security and certification issues of verified (de-mail)-providers.

Regarding copyright issues related to BYOD, the major source of law in Germany is the **Urhebergesetz** (UrhG), which also transposes the different copyright related directives referred to above.

Finally, genuinely and without one particular source in European law¹⁸, German civil law (**Bürgerliches Gesetzbuch: BGB**) is highly relevant regarding liability. I provide rules on contractual liability (e.g. §§ 249 et seq. BGB and §§ 280 et seq. BGB), working contracts (Dienstverträge; §§ 611 et seq. BGB) and tort law (§§ 823 et seq. BGB).

¹⁷ "Sicherheit in der Informationstechnik im Sinne dieses Gesetzes bedeutet die Einhaltung bestimmter Sicherheitsstandards, die die Verfügbarkeit, Unversehrtheit oder Vertraulichkeit von Informationen betreffen, durch Sicherheitsvorkehrungen 1. in informationstechnischen Systemen, Komponenten oder Prozessen oder 2. bei der Anwendung von informationstechnischen Systemen, Komponenten oder Prozessen."

¹⁸ However, many European directives, such as those on distance selling, E-commerce, general terms and conditions etc. are transposed in the BGB. the processing of personal data and on the free movement of such data (General Data Protection Regulation), COM(2012) 11 final.

4. Liability – Legal Framework for Data Protection and Data Security in Germany

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Liability is by far the most important legal issue related to BYOD practice, as generally the employer can be held liable for breaches of law deriving from non-compliance of the employee's device (as will be shown).

4.1 Data Protection Law

4.1.1 Concept of Controller and Processor

Liability in terms of data protection law is coupled to one of the most fundamental principles of data protection law: the concept of controller and processor. This concept is laid down in Art 2 d) and e) 95/46/EC and transposed by § 3 VII BDSG (Verantwortliche Stelle) and § 11 BDSG (Auftragsdatenverarbeiter).

Both terms form a conceptual pair, referring – briefly said – to the controller as to the body legally responsible for data processing and to the processor as to the body technically and practically carrying out data processing.

By definition of **Art. 2 d) 95/46/EC** the term '**controller**' shall mean "the natural or legal person, public authority, agency or any other body which alone or jointly with others determines the purposes and means of the processing of personal data;".

Art. 2 e) 95/46/EC defines '**processor**' as "a natural or legal person, public authority, agency or any other body which processes personal data on behalf of the controller".

Regarding **liability** Art. 23 95/46/EC states explicitly: "Member States shall provide that any person who has suffered damage as a result of an unlawful processing operation or of any act incompatible with the national provisions adopted pursuant to this Directive is entitled to receive compensation from the **controller** [highlighting by the authors] for the damage suffered". This has been transposed by § 7 BDSG.

Moreover, the controller is subject to sanctions for unlawful collection or processing of data, § 43 BDSG (whereas criminal liability as laid down by §§ 44 BDSG affects only

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natural persons, sanctions imposed by § 43 BDSG include legal persons such as companies as well).

Oppositely, the processor is not subject to the aforementioned liability and sanctions, as the controller exclusively is responsible for compliance (§ 11 I BDSG), except cases of breaching of contractual obligations by the processor (including unlawful data processing against contractual obligations, but not including unlawful processing compliant to contractual obligation, for which the controller alone is liable) and some few exceptions laid down in § 11 IV BDSG.

4.1.2 BYOD - Company as Controller

Taking into the account the definition of 'controller' as provided by Art. 2 d) 95/46/EC, the **employer exclusively** has to be considered '**controller**' of personal data that is processed for commercial purposes of the employer, as the employer alone defines the purposes of the company's data processing – be it on company devices or

be it on devices owned by the employee. The employee as a natural person does not determine such purposes, but carries out the tasks which the employee is required to do by his or her contractual obligations stemming from the working contract and possibly being more concretely defined by instructions of superiors.

4.1.3 BYOD - Role of the Employee

Usually, outside BYOD environments, employees behave as 'part of the controller' itself, which as a legal person obviously requires natural persons to act for it. As such, they cannot be 'processors', nor can they be autonomous controllers for the same reason. Particularly, both the soft- and the hardware used for data processing are provided by the company alone and hence the controller itself (which typically owns and at least governs it), preventing the employees from being processors. Oppositely, characteristic for a 'processor' is provision and securing of technical infrastructure for processing as part of a paid service. Typi-

cal cases for such services are hosting services or provision of server capacity.

BYOD practice, however, does not entirely fit in either of these categories. Neither is – obviously – the hard- and software exclusively governed by the employer, nor is the employee a professional service provider regarding the aforementioned services. **BYOD** practice hence constitutes a sort of **hybrid** phenomenon.

Consequently, the questions arises, whether or not an employee could be seen as ‘processor’ or, if not, possibly as an autonomous controller next to employer as (main) controller in BYOD environments.

An employee could be seen as a processor to the extent that he or she provides own hardware and in some cases possibly even own software for fulfilling obligations stemming from the working contract. As this hard- and software is not company-owned, insofar a certain parallel to the role of a processor exists. However, there are **major differences** of significant gravity compared to the **role**

model of a **processor** as envisaged by law.

Firstly, typically the only **legal relation** between the controller and the processor is the processing contract (§ 11 BDSG), while apart from that the processor will be neither legally related to the controller, nor be even part of it. There are, however, certain constellations in which closer legal relations between the controller and processor may exist independently of the processing contract, if e.g. a **subsidiary company** is entrusted with data processing for an entire group. Still, in these cases the processor remains **legally** a completely **autonomous** (legal) **person** (though owned and governed by the controller), while employees – though naturally being legally autonomous natural persons – act simultaneously as organs of the controller (and hence as the very same legal person), which is not the case for subsidiary companies. If an employee initiates a certain process of data processing on behalf of his employer (be it on his or her own or a company’s device), this forms an action of the controller himself. If, however, an employee of a subsidiary company initiates a certain process of data pro-

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cessing, this will constitute an action of this subsidiary company and not of the governing company. This is a crucial difference between BOYD practice and outsourcing data processing to a subsidiary.

Secondly, processors typically provide particular IT expertise which is part of the service as much as provision of technical infrastructure. Hence, services of a processor are typically booked for taking advantage of its **IT expertise** as well as to outsource technical and security maintenance, such as e.g. securing of servers, maintaining firewalls, creating data back-ups and similar measures. An average employee (user), on the opposite, will typically not have such expertise, but only average IT knowledge (depending on his / her job and education). What is more important, an **employee** will in any case certainly **not** have any (technical, financial, human) **resources comparable** to a professional IT service provider to secure devices against security threats to the extent legally, technically and economically required (keeping in mind that company data usually is of much higher economic

value than 'ordinary' private data; hence requiring a completely different quality of security measures). Consequently, an employee does not fulfil the requirements of § 11 II BDSG and thus cannot be selected as a processor.

Hence, oppositely to IT experts, an average employee taking part in a BYOD model legally cannot be considered a processor ¹⁹.

This leads to the question, whether or not an employee can be seen as a second autonomous controller next to the employer in BYOD environments. Taking into account the legal definition of Art 2 d) 95/46/EC the question therefore has to be, whether or not an employee is a natural person, who alone or jointly with others determines the purposes and means of the processing of personal data. Whereas purpose and means²⁰ cannot be determined by the employee alone, they could still be determined jointly with the employer.

Obviously, however, the purposes of the processing are determined by the employer.

¹⁹ Differently: Frank Koch, „Arbeitsrechtliche Auswirkungen von „Bring your own Device“ - Die dienstliche Nutzung privater Mobilgeräte und das Arbeitsrecht“, ITRB 2012, 35, 39; Koch, however, does not take into account any of the aforementioned arguments against considering an employee a „processor“ and simply assumes this without further discussion.

²⁰ Even if by owning the hardware the employee governs it to some extent, the capacity to use this particular device for company purposes stems from the allowance rooted in the implementation of a BYOD model. In other words: by implementing a BYOD model the company determines the means to 'employee owned devices', because only thereby the employee is entitled to use this particular device. If, on the contrary, a company would not allow use of privately owned devices for company purposes, the employee

yer itself exclusively, as all competences to take decisions legally are united in the legal person of the employer, regardless of the natural persons standing behind it and taking these decisions. This becomes particularly obvious when taking into account that all competences to take certain decisions are never affiliated with a natural person as such, but always to its position in the company. If the person changes position or leaves the company, the position-related competences will be transferred to another natural person taking over the position of the original. Competences to determine purposes of data processing therefore are bound to positions within a company and hence to the company itself, and not the individuals holding these positions. Therefore, the purposes of data processing are determined by the company alone, even though in each individual case these decisions need to be taken by natural persons acting for the company.

In BYOD environments, however, it could be argued that the employee determines the 'means' of processing if the employee

is free to choose the private device to use. 'Means' as a legal term, however, does not only refer to 'technical means', but also to organisational means, such as processes, policies and (human, technical and financial) resources. The employee, however, usually has little to no influence on organisational means²¹, as organisation of work falls within the field of competence of the employer (though some level of self-organisation may exist). To the contrary, certain decisions on organisational means „can be well delegated to processors (as e.g. “which hardware or software shall be used?”)²². Therefore, partial influence on the means of processing in BYOD environments will not make the employee a controller (regardless of the fact, whether or not the employee is a processor instead). Particularly, having no influence on the purposes of processing at all will prevent any assumption of controllership, as the competence to determine purposes is the genuine privilege of the controller.

Therefore, the employee is not to be seen as a controller and the usage of BYOD does

²⁰ would not be entitled to do so. As a result, already by implementing a BYOD model the company participates in determining the means of data processing. Moreover, for security and compliance reasons the company will need to implement strict rules and policies on 'how to use' the employee owned device (e.g. regarding certain security measures, in particular security software). This determination of the mode of use of the device also constitutes a determination of the means for data processing.

²¹ Art.-29-Working-Party, Opinion 1/2010 on the concepts of "controller" and "processor", S. 14; http://ec.europa.eu/justice/policies/privacy/docs/wpdocs/2010/wp169_de.pdf.

²² Ibid.

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not as such lead to a transfer of personal data from one controller (the employer) to another (the employee).

4.1.4 Exclusive Liability of the Employer in BYOD environments

As a result of the aforementioned, the employer as (exclusive) controller is solely responsible for legal compliance of company's data processing²³ both on company owned devices and in BYOD environments. This means in particular, that all legal obligations to maintain data security exclusively lay with the employer. The employer therefore needs to **maintain** and **control** the **same level of data security** on an employee's device – including smart phones – as on company devices. If BYOD models are envisaged or applied, clear and legally binding **internal security policies** are required, *which data under which conditions* may be stored or otherwise processed on 'private' devices and which not.

This, in practice, involves impediments of both legal and practical nature, which are hard to overcome, as, ideally, the company's IT department would need exclusive **administration rights** and privileges on the employee's devices and his private domains (Win ID, social networks) to efficiently guarantee an adequate IT security level comparable to the level maintained on company devices. This, obviously, is practically not feasible on private devices; if anything, **shared administration rights (in role based environments)** might be an alternative, while – apart from the relatively limited practical benefit – no employee can be obligated to grant administration rights at all on private devices and processes, which consequently renders the BYOD model a **facultative model**, depending on the employees' co-operation. Rules and limits of this voluntary cooperation should therefore ideally be regulated by a written and explicit agreement which is drafted, negotiated and signed by the relevant stakeholders.

²³ Note the very wide definition of 'processing of personal data' in Art. 2 b) 95/46/EC: " 'processing of personal data' ('processing') shall mean any operation or set of operations which is performed upon personal data, whether or not by automatic means, such as collection, recording, organization, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, blocking, erasure or destruction;".

Moreover, shared administration rights significantly **reduce** the effectiveness of **IT security** measures, rendering control of IT security relatively difficult as – for example – it will be impossible to prevent the user from downloading and installing possibly dangerous or illegal software from web and similar.

4.2 Data Security Law

Data security law can be seen as a sub-branch of data protection law and is closely related. Regarding the German legal framework, it can be rooted in **§ 9 BDSG** in conjunction with the related **annex** and the **IT security rules** issued by **Bundesamt für Sicherheit in der Informationstechnik** (Federal Agency for IT Security).

Economic law – videlicet **company law** – turns pro-active security measures for IT infrastructure into mandatory measures regardless of privacy issues, as these are crucial backbones of a company's technical infrastructure, in which data repositories represent significant economic values. Loss of data repositories, leaking of data

and unavailability of IT infrastructure constitute major economic threats to every company. Consequently, **guaranteeing IT security pro-actively** is among the **principal obligations** of the **management board**, being part of its obligation to protect the assets of the company members / shareholders (e.g. for stock corporations in Germany this obligation stems from **§ 91 II AktG**).

4.2.1 BYOD – Obligation to Maintain / Control Data Security

Consequently, both **§ 9 BDSG** (keeping in mind that the company exclusively is controller) and the diverse provisions in company law defining the obligations of management boards (including IT risk management) are both assigning responsibility for IT security to the company itself and hence to its executives, who may delegate execution of this obligation to particular departments (e.g. CERTs) as appropriate, while – nevertheless – holding final responsibility. These principles, as detailed above, remain the same in cases of BYOD environments.

4.2.2 Legal Requirements in Detail

Ensuring data security in BYOD environments therefore causes significant impediments in practice. The minimum measures to be taken for data security are laid down in the **annex to § 9 I 1 BDSG**. These are basically the following.

Generally, internal **company organisation** needs to meet particular requirements of data protection, taking into account the nature of the data collected, stored and processed; particularly encryption by **state-of-the-art encryption** technologies. In particular, the following measures will need to be taken as appropriate:

- limiting **physical access** to devices;
 - preventing **unauthorised use** of devices;
 - limiting **authorised access** to devices and data which is meant to be accessed by the particular authorised user only and preventing **unauthorised reading, copying, alteration or deletion** of data (implementation of the 'Need-to-Know' principle (NTK principle);
 - guaranteeing that during **transmission** of personal data or during **transport** or storage of such data on storage devices cannot not be accessed, copied, altered or deleted, and that such transmission / transport of data is logged;
 - guaranteeing **subsequent control**, if and by whom personal data has been entered, altered or deleted (**data history**);
 - guaranteeing that personal data can be processed by **processors** only in a way which is compliant to the directive of the controller;
 - guaranteeing that personal data is protected against **accidental loss or destruction**;
 - guaranteeing that personal data collected for different **purposes** can be processed **separately**.
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4.2.3 Issues of Implementation

Taking into account that BYOD practice by definition refers to ‘mobile devices’ (as they are ‘brought’), it becomes obvious that some of the above requirements hardly can be met. If they can be met at all, a significant technical and organizational effort as well as precise legal agreements and binding guidelines are involved.

If a BYOD model is favoured anyhow – which will require thorough consideration – the implementation will have to involve several stages.

Firstly, the cited annex to § 9 I BDSG directly applies only to **personal data**. That does not mean, however, that it would not apply indirectly for any **other data** since legal obligations to maintain data security – as has been shown – exist also beyond data protection law, which means that **§ 9 BDSG** with additional consultation of the **guidelines of Bundesamt für Sicherheit in der Informationstechnik** will need to be regarded as a **general framework** for defining more

precisely such obligations. Still, this framework may be handled somewhat more flexible, if personal data on mobile devices belonging to employees is prevented.

To the extent to which it may be considered necessary to process personal data on such devices, **§ 9 S. 2 BDSG** opens up possibilities to create a **balance** between **legal requirements** and **practical needs**. According to this provision, measures as described above (annex) are only required, if the **effort** involved stands in **appropriate relation** to the **level of protection** intended / required.

4.2.3.1 Personal Data

Personal data according to § 3 I BDSG are

- individual statements (as opposed to statistical information) concerning the
- personal or factual relations of an
- identified or identifiable
- natural person (data subject)²⁴.

Briefly, **any information** which can be somehow at least **theoretically linked to a**

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natural person has to be considered personal data, consequently falling within the scope of data protection law. Within company data processing, typically this will involve, but not be limited to **employees' data** and **client's data** (if clients are natural persons) as well as any other data of natural persons.

More difficult to classify is **email data** (emails themselves). Principally, emails which are stored (and not in process of sending) under the rule of German law are protected by data protection law (and not by telecommunication law, once the process of telecommunication has been completed). For this reasons, emails are widely considered **personal data** of the **sender** and **recipient**.

This, however, becomes more complex when **business mail** is involved, which basically serves communication of two legal persons (preventing – theoretically – such mail from being personal data), while nevertheless such mail would need to be written and read by employees as such, which

again may render it personal data of these employees. In this case, such email certainly is personal data of the employees as soon as any personal content is included, such as personally addressing the other as a familiar business partner by **personal phrases** beyond the purely business related content of the mail.

If, however, such email is solely formal and only serving the purpose of exchanging information between the two companies (e.g. brief and formal confirmation of an order), one might have the idea that such mail was no more personal data of the employees as it no more involved information about their personal or factual relations. This, of course, would face difficulties in practice as already the information that the respective employee is working for the one or the other company again and certainly is personal data. The **discussed constellation** would therefore be limited to cases in which not even names of employees involved would appear in the emails (and addresses), which appears to be – if existing at all – an **absolute exception**. There-

fore, for reasons of compliance (business) email should be generally considered personal data and treated accordingly.

Apart from that, data protection law knows two categories of personal data: personal data which belongs to the '**special categories of personal data**' (Art. 8 95/46/EC and § 3 IX BDSG) and such which does not. The former categories include any personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, trade-union membership, as well as data concerning health or sex life.

These categories of personal data are considered **highly sensitive** by law and thus granted particular protection. For that reason, **data security** has to be **particularly strict** for such categories of data. Consequently, data belonging to the special categories of personal data may **not** be stored on / transferred to / collected by **devices**, which are part of **BYOD** models as – for the reasons given above – IT security level cannot be kept on the same high level as on company owned devices.

The (existing) practice of sharing **patient's data** via personal iPhones in hospital is not only breaching requirements of data protection law, but also leads to full liability of the hospital. Generally, hospitals as much as any other business involving one or several of the categories of data referred to above as special categories will not allow at all implementation of BYOD models for security reasons.

4.2.3.2 Non-personal Data

Non-personal data is rare, but could theoretically exist as technical or financial company data, if the **author** of the data is **not recorded**; which however rarely will be the case. If the author is recorded, such data remains personal data of that employee even if the information on the author is kept separately, because the author remains (theoretically) identifiable.

4.2.3.3 Implementation of IT Security Measures

As a result of the aforementioned and the limited possibilities to maintain on private devices the same level of security as on

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company devices, only certain data – if at all – may stored on / transferred to / processed on the latter devices. Suitable for **BYOD** environments generally is **only data of low sensitivity**, both in terms of economic value (and business confidentiality) and of privacy. In these cases, a **lower level of security** will still be **appropriate** and oppositely a higher security level may exceed what would be a **balanced effort / purpose of protection relation** as provided by **§ 9 S. 2 BDSG**.

Generally the following rule applies:

- The lower the sensitivity of the data in question, the lower the security level required.

Additionally and with the background of requirements of economic law, the following rule applies:

- The lower the risk resulting from unavailability of a certain device, the lower the security measures needed.

The latter requirement can be easily met in BYOD environments by ensuring that in

case of unavailability of the employees' device the data stored upon it remains available and other machines with the same configuration may be at hand to take over. Hence, **frequent synchronizing** of data with company governed storages is mandatory, as well as provision of **back-up systems** providing a **comparable software environment** (respectively allowing only data processing on employees' devices which is of standard nature, such as working on word documents, emails and similar).

4.2.3.4 BYOD and § 9 BDSG in Detail

The following sub-section shall comment on the requirements set-up by § 9 BDSG and its annex in detail and try to provide some **approaches** for possible **solving of § 9 BDSG related issues**. It can only be emphasized one more time that the employer alone is liable for IT security on the devices of the employee. Hence, the **employer needs to provide all necessary security measures** (including software and maintenance) **for free**; while additionally consent of the device's owner for frequent control and maintenance of security measures is

needed. Concerning this it should be kept in mind that an **employee cannot be obliged** to agree to such control and maintenance measures, consequently **BYOD** model will need to provide certain particular **incentives** to employees. If it would appear possible that employees have not given their **consent** to granting the employer access to their privately owned devices for the purpose of guaranteeing IT security **freely**, but under the pressure of fearing disadvantages at work, such **agreements** could be regarded **void** (e.g. due to violation of bonos mores, § 138 BGB), with all resulting legal consequences.

In many cases, however, a model involving provision of a company owned and company governed devices, which may be used privately as well, may provide very similar results to genuine BYOD models while oppositely not triggering the immense amount of legal and technical issues involved with BYOD, as in this case it will be no problem at all for the company to maintain high security standards on these devices without need of any additional agreements with the user.

Provision of company owned devices for both professional and private use hence should be considered as an **alternative**.

If, however, a BYOD model is considered the preferable option, the following measures may be – depending on each individual case – helpful.

4.2.3.4.1 *Guidelines and Contractual Obligations*

All rules, allowances and prohibitions need to be defined clearly and easily accessible within company's security policies and/or security operating procedures, which need to be kept up to date. Employees participating in BYOD models need to be provided with these guidelines in **written form** and – to the extent appropriate – **trained** accordingly²⁵, and should confirm reception and understanding of these guidelines by **signature**. Making these guidelines internally available online additionally is strongly recommended.

Compliance with IT security policies needs to be **guaranteed** by technical measures

²⁵ Christiane Bierehoven, „Zum Spannungsverhältnis zwischen dienstlicher Nutzung privater Mobilgeräte und Absicherung sensibler Unternehmensdaten“, ITRB 106, 107.

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where possible and appropriate (e.g. automated check of strength and regular change of passwords) and controlled frequently to the extent appropriate. This is an obligation of the employer. Admittedly, the owner of a device would be in general responsible for keeping the device secure and updated, however, an employer could only expect provision of an employee owned device 'as is'²⁶, which generally would meet the requirements set up by the legal obligations to maintain IT security as described above. Consequently, the employer becomes indirectly responsible for maintaining IT security on the private devices of the employee. To install and maintain security tools on these devices, respective rights need to be granted to the employer by **mutual agreement**²⁷. An employee is obliged – exactly as outside of BYOD environments – to support IT security by careful, considerate and prudent use of IT infrastructure, even if it belongs to him / her. By agreeing to professional use the employee accepts **responsibility for legally protected interests of the employer**, which he / she is obliged to preserve to extent which can be expected by an averagely

skilled employee in the same position and with the same education.

Use of private devices for fulfilling professional obligations **beyond the framework** of such guidelines should be explicitly **clearly prohibited** for IT security reasons.

Private use of private devices – for obvious reasons – **cannot be entirely prohibited** by working contracts; it is, however, possible to limit private use to times of breaks²⁸. Oppositely, **professional use** of private devices can usually **not be claimed**, as provision of means of labour / work equipment is a genuine obligation of the employer²⁹. BYOD models hence require separate agreements, which additionally need to be based on a free choice of the employee. Applying the model of "Anspruch aus betrieblicher Übung" (claims of employees against employers arising from persisting common practice within the respective company) on BYOD environments and hence an opposite constellation, in which the employer would get the right to claim further provision of private devices by the employee, as has been

²⁶ Frank Koch, „Arbeitsrechtliche Auswirkungen von „Bring your own Device“ - Die dienstliche Nutzung privater Mobilgeräte und das Arbeitsrecht“, ITRB 2012, 35, 37.

²⁷ Frank Koch, „Arbeitsrechtliche Auswirkungen von „Bring your own Device“ - Die dienstliche Nutzung privater Mobilgeräte und das Arbeitsrecht“, ITRB 2012, 35, 37.

²⁸ Frank Koch, p. 36.

²⁹ Frank Koch, *ibid.*

proposed³⁰, appears rather questionable in the light of fundamental principles of labour law and can – also due to lack of prejudice – not be recommended.

4.2.3.4.2 *Data Loss Prevention Systems*

Data Loss Prevention Systems provide powerful means to maintain a high level of security. This, however, involves a degree of surveillance which appears to be questionable due to both privacy concerns and questionable legitimacy against the background of labour law³¹.

4.2.3.4.3 *Separate professional profile*

Wherever possible, creating a separate profile for the professional use of the device, which should be completely independent from the private profile, appears advisable not only for better control of IT security, but also to protect private data of the employee against unauthorized notice by IT security department of the company maintaining the private device. Oppositely, such strict separation is mandatory as well for protection of

business secrets against unauthorized notice of third parties³². This is particularly relevant for BYOD practices as private devices naturally may be borrowed to friends and family members as well, in which case the private profile (only) shall be used and the professional profile remains shut and protected against misuse.

4.2.3.4.4 *Physical Access Control to Device*

Obviously, this requirement can hardly be met regarding private **mobile devices (laptops, smart phones)**, as by their nature they are carried around by the employee to which they belong and hence are taken **beyond the limits of physical control** of the employer (controller).

This issue can be tackled by the following approaches, depending on the security level: Technical safeguards:

- Prevention of storing data on the device (tunnelling via **VPN** in conjunction with strict access limitation preferable)
- **Encryption** of any data stored on the device in accordance with the security

³⁰ Frank Koch, p. 37.

³¹ Comprehensive exposition by Isabell Conrad, "Einsatz von Data Loss Prevention-Systemen im Unternehmen - Geheimnis-, Konkurrenz- und Datenschutz in Zeiten von „Consumerization“, und „Bring Your Own Device“ " CR 2011, 797 et seq.

³² Christiane Bierehoven, a.a.O.

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guidelines in force issued by Bundesamt für Sicherheit in der Informationstechnik

- Technical **prevention** of copying / accessing **sensitive data** onto / by the device
- **Strong** password and / or other **access control**

Where some of these technical safeguards cannot be applied for technical reasons – such as on smart phones – use of these devices in BYOD environment is per se limited to data of very low sensitivity.

Contractual safeguards:

- Obtaining the right to installing and maintaining of necessary **security tools**
- Prohibiting negligent use of the device (this will, as the device is owned by the employee, require strong incentives as otherwise an agreement to that will appear not freely given, rendering it likely to be considered void; in these cases providing company devices appear to be the technically and legally safer option)

- Clear guidelines which data to use on the device under which circumstances and which not to use (the latter being at minimum as important as the former).

4.2.3.4.5 *Logic Access Control to Device*

Depending on the device, this criterion can be met by provision of the necessary hardware or software. Basically, the rules suggested above apply in this context as well, particularly regarding separated profiles. Again, smart phones by their nature typically will not allow maintaining the same security level as e.g. laptops, while security management can be enhanced by using the device as a passive access to higher secured company devices (servers) only.

4.2.3.4.6 *Logic Access Control to Data*

Limiting access to data depending on the authorization of each user can be achieved even on user owned devices easiest by **preventing storage of data** on these devices in total. Instead, a **VPN connection** to company servers holding the data required

²⁶ Frank Koch, „Arbeitsrechtliche Auswirkungen von „Bring your own Device“ - Die dienstliche Nutzung privater Mobilgeräte und das Arbeitsrecht“, ITRB 2012, 35, 37.

²⁷ Frank Koch, „Arbeitsrechtliche Auswirkungen von „Bring your own Device“ - Die dienstliche Nutzung privater Mobilgeräte und das Arbeitsrecht“, ITRB 2012, 35, 37.

²⁸ Frank Koch, p. 36.

²⁹ Frank Koch, *ibid.*

or any similar tunnelling appears preferable. In that case, the existing access rights management system can be used for BYOD applications as well.

If data is stored on the employee's device, it should be stored **physically** (not only logically) **separated** from private data³³. This can be achieved by using separated partitions or – depending on the device – separated drives for private and business data each. Such precaution serves the maintaining of security of business secrets regarding business data as much as maintaining privacy of the employee's private data. To ensure effectiveness of such measures, administration rights need to be assigned in such way that accessing the private storage is disabled for the company and accessing the business data is disabled for any profile other than the particular profile for business use, which shall not have admin rights. Storing business data on removable drives has to be limited or prevented (depending on the sensitivity of data).

Logic access control is particularly problematic in cases in which smart phones automatically transfer data into clouds instead of storing them locally. Cloud computing as such triggers an avalanche of legal issues involved – particularly for US-based services – the addressing of which would exceed the scope of this compendium. As general rule storage of data within clouds results in practically no physical access control to the data storage and relatively limited logic access control (which depends on the cloud provider). If the cloud provider cannot be considered contractual processor of the company – which typically will be the case in the smart phone scenario outlined above – processing data on smart phones will result in a loss of control which depending on the individual case is likely to result in a lack of compliance with data security law. Consequently, smart phones which compulsory make use of cloud computing should not be allowed to participate in BYOD models.

³³ Christiane Bierehoven, „Zum Spannungsverhältnis zwischen dienstlicher Nutzung privater Mobilgeräte und Absicherung sensibler Unternehmensdaten“, ITRB 106, 107.

4.2.3.4.7 *Access Control to Data in Transmission / Transfer*

An effective measure to prevent unauthorized accessing of data stored on the device in transport can be **encryption**, while the preferable model remains to store on it as little data as possible in favour of the discussed **VPN** model.

As to transmission of data, **encrypted transmission** is required, where appropriate. This again may involve VPN or otherwise email encryption. The necessary tools have to be provided and maintained by the employer. Where such encryption is not possible, transmission of data needs to be limited to data of very low sensitivity or otherwise entirely forbidden by contractual obligations, back-upped – where possible – by technical safeguards.

4.2.3.4.8 *Data History*

History of entering, altering or deleting data can be recorded by suitable software, which can be provided by the employer. The software would need to **distinguish**

between **professional** and **private use** of the device, as oppositely any **private** entering / altering / deletion of data **may not be recorded** together with such actions of professional nature to protect privacy of the employee. This again speaks very much for a solution using **separate user profiles** on that device. Where such safeguards cannot be taken, no version history can be recorded, which again limits processing of data to such cases only, in which a history would exceed the appropriate effort or would not be needed for other reasons (e.g. **IMAP** email).

4.2.3.4.9 *Protection against Accidental Loss / Destruction of Data*

This requirement can be met best by the suggested **gateway** solution. Otherwise, **frequent synchronizing** with company servers is required. Regarding email, **IMAP** provides a suitable solution. Provision and maintenance of the technology needed, again, is an obligation of the employer. Particular attention needs to be granted to document regarding which legal reten-

tion periods are prescribed by law³⁴, such as is the case for tax law (e.g. § 14b Umsatzsteuergesetz) and trade law (e.g. § 257 Handelsgesetzbuch). Such documents need to be secured in a way that rules any accidentally loss completely out. Generally, it appears recommendable to prevent such documents from being used in BYOD environments. If that should be necessary nevertheless, working with such documents should be limited to remote access to frequently back-upped servers (e.g. raid systems) within the company itself by secure tunnelling, while preventing copying onto employee owned mobile devices.

4.3 Telecommunications Law

Under which conditions a **company** shall be considered a **telecommunication service provider** has been subject to **legal debates** for over a decade. Whereas it has been argued that the service being legitimately available for moderate private use by employees was sufficient to render the employer a telecommunication service provider³⁵, some courts have ruled oppositely³⁶. These

judgements' reasoning is based upon the interpretation that due to the lack of providing services towards third parties an employer could not be considered a service provider at all³⁷. The latter approach leads to considering telecommunications law as not being applicable at all (including telecommunications data protection and data security law).

This issue becomes particularly relevant in **BYOD environments**, as this model obviously is based on the use of **private devices**. Consequently, not only will it be hardly possible to legally oblige employees to use their private devices only for professional purposes, but also by default these devices are likely to run applications installed for private purposes only, which e.g. typically automatic update via internet. As a result, using the company's telecommunication network for private purposes in such cases needs to be considered rather the rule than the exception and is a fundamental part of any BYOD model. Moreover, it could be hardly legally required that employees would need to turn off e.g. all update func-

³⁴ Frank Koch, „Arbeitsrechtliche Auswirkungen von „Bring your own Device“ - Die dienstliche Nutzung privater Mobilgeräte und das Arbeitsrecht“, ITRB 2012, 35, 36.

³⁵ Dendorfer, in: Moll, Münchener Anwaltshandbuch Arbeitsrecht, 3. Auflage 2012, § 35 Compliance im Arbeitsrecht, Rn 194-195 with further references.

³⁶ LAG Berlin-Brandenburg v. 16. 2. 2011 – 4 Sa 2132/10 – BeckRS 2011, 72743; LAG Niedersachsen v. 31. 5. 2010 – 12 Sa 875/09 – BeckRS 2010, 70504.

³⁷ ArbG Berlin: Urteil vom 17.08.2010 - 36 Ca 235/10.

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tionalities of privately installed software on a device during working time (if this was technically feasible at all). Apart from that, labour law prevents legitimacy of banning all private use without any exception even during breaks³⁸.

As there are good legal arguments speaking against the approach having been taken by the two courts in their decisions referred to earlier and as it cannot (yet) be assumed that the decisions of these two courts will be necessarily followed by other courts, it remains recommendable to seek compliance with telecommunications data protection law (which is widely harmonized with general data protection law anyway).

Telecommunications privacy is a fundamental right granted by Art. 8 of the **Charter of Fundamental Rights in the European Union** and Art. 10 **Grundgesetz**³⁹ (and by several other domestic constitutions). **§ 88 TKG** constitutes more detailed requirements to transpose the fundamental right on the level of Federal Law.

Telecommunications privacy covers both all possible content of telecommunications as well as any further particulars of telecommunications, especially the fact whether somebody is or was involved in telecommunications (including unsuccessful connection attempts). Each telecommunications provider (regardless of services being available to the public or not) is **obliged to maintain and protect telecommunications privacy**; this obligation remaining in force beyond completing the particular activity by which it has been established. In context of BYOD environments e.g. the employer has to guarantee continuation of non-disclosure of all facts being protected by the telecommunication secret also subsequent to employment of the particular employee. Likewise, any employee having been in contact with any information of another individual being protected by the telecommunication secret has to maintain confidentiality also beyond working on this case and beyond being employed in this particular company at all. There is no temporal restriction regarding this obligation to non-disclosure. Failing to comply will cau-

³⁸ Frank Koch, „Arbeitsrechtliche Auswirkungen von „Bring your own Device“ - Die dienstliche Nutzung privater Mobilgeräte und das Arbeitsrecht“, ITRB 2012, 35, 36.

³⁹ German Constitution.

se criminal liability under the further conditions laid down by § 206 Strafgesetzbuch.

Maintaining and protecting telecommunication privacy demands in particular the following:

- Accessing any information about the content and further particulars of telecommunication is prohibited, unless it is inevitable for providing this particular telecommunication service or for maintaining and protecting technical infrastructure.
- Any information accessed lawfully under the above mentioned conditions may be used for the above mentioned **purposes** exclusively. If therefore e.g. in context of maintenance of technical infrastructure it would become apparent that an employee would spend hours on Facebook during working time, this information might not be used; any record of it would have to be deleted after maintenance activity has been accomplished.
- **Transferring** any information gathered under the above mentioned circum-

tances – or otherwise using it for purposes other than providing and maintaining telecommunication services – is lawful only, **if explicitly allowed by Telekommunikationsgesetz or any other Federal Law**, which explicit refers to telecommunications. Practically, this refers in particular to all different provisions allowing law enforcement and intelligence authorities to access certain information under certain conditions (compare in particular the rules laid down by § 110 TKG et seq. as well as provisions in each particular code governing the activities of the authority in question⁴⁰. Likewise, the obligation to report about intended future commitment of certain severe crimes (for details consult § 138 Strafgesetzbuch) remains in force despite of telecommunication privacy.

§§ 91 – 107 Telekommunikationsgesetz apply to *any* telecommunication service which is *routinely*⁴¹ provided (§ 91 I TKG), without requiring the service to be ‘public’, which widens the scope in comparison to

⁴⁰ Such as Bundeskriminalamtgesetz, BND-Gesetz, MAD_Gesetz, the diverse Police Codes (Polizeigesetzes des Bundes und der Länder), etc.

⁴¹ German originally wording: „geschäftsmäßig“, which as a legal term in this context does not (only) refer to commercially provided services, but to any free service offered as well, unless it is not only provided on exceptional basis.

the European directive 2002/58/EC (telecommunications privacy), which applies to public telecommunication services exclusively (Art. 3 2002/58/EC). Particular focus should be laid on § 96 TKG (governing the use of traffic data) and § 98 TKG (governing the use of location data).

§§ 108 – 115 TKG provide rules on public safety, an important subset of which concerns **telecommunications infrastructure security**. Whereas most of these rules apply to ‘public’ telecommunication services exclusively, some of the basic rules – such as the obligation to guarantee telecommunications privacy and data protection as provided for by § 109 I TKG – apply to any service provider.

4.4 Copyright Law

BYOD practice involves certain risks of copyright infringement, for which the employer may be held liable. This is the case firstly due to fact that in BYOD environments the employer has no exclusive administration rights for the particular device and hence

a **lack of control**, which prevents him from effectively preventing the employee from using illegal copies of software. Secondly the situation becomes even more complicated, when software is used under licences limited to **private use only** (otherwise licences would be significantly more expensive typically). If users therefore continue to use software which they have installed for private use exclusively on behalf of the employer, this also may result in (at least negligent) copyright infringements. Thirdly, providing software to the employing company as an autonomous legal person is likely to be interpreted as **provision** of the software **to a third party**, which may breach licence agreements as well.

A particular issue may arise in context of **software programming**. In accordance with § 69b UrhG usually all copyrights for software created by employees at work are assigned to the employer, if not the working contract provides for anything different. If, however, software is written on a private device – and possibly even within privately installed software development environ-

ments – it may become hard to determine whether or not the software has been created in relation to the employment, if it is not designed according to particular directives of the employer. In these cases it may be hard to prove to whom belong the copyrights of a certain algorithm. If, however, software is created on company devices (and thereby necessarily and additionally by usage of company owned software development environments), far more arguments speak for applicability of § 69b UrhG and hence exclusive copyright ownership of the employer.

4.5 Civil Law

Generally, the employee is not obliged to provide replacement if his / her private device fails or is lost⁴². A different provision may be established by agreement between the employer and the employee, whereas, however, particular protection of employees against possible **unfair contractual clauses** within working contracts needs to be respected. Certainly, it cannot be assumed that an employee provides a device for

free, in particular: covering costs involved alone⁴³. Oppositely, the employer is **liable** for loss or damage of the employee's device while in professional use⁴⁴, if the employee did not act intentionally or gross-negligent. Generally, principles of "innerbetrieblicher Schadensausgleich" (principle of company internal damage compensation; a principle developed by German labour jurisprudence providing for a limited liability of an employee towards the employer) should be applied inversely: the employer should be liable towards the employee to the same extent to which the employer would have had to bear the damage alone, if the device had been company owned and lost / damaged by the employee.

4.6 Criminal Law in Competition Law

Normally, criminal liability by §§ 17 I, 18 I UWG (intentional disclosure of business secrets) will not apply in BYOD environments as firstly the employer needs to take into account that the employee is free to occasionally provide his private device to

⁴² Frank Koch, „Arbeitsrechtliche Auswirkungen von „Bring your own Device“ - Die dienstliche Nutzung privater Mobilgeräte und das Arbeitsrecht“, ITRB 2012, 35, 38.

⁴³ Frank Koch, *ibid.*

⁴⁴ Frank Koch, *ibid.*

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friends / family members and secondly, the employer is responsible (alone) to prevent misuse of such devices particularly in such cases by appropriate security measures. If,

therefore, the employee does not provide the device on purpose to allow a third party access to business secrets, criminal liability of the employee does not exist⁴⁵.

5. Good Practice and Guidance

BYOD models are both legally and technically challenging, in particular due to their hybrid nature. Additionally, providing guidance is somewhat limited by two factors:

- firstly, IT infrastructure typically is highly diverse: probably a distinct or even unique environment being precisely adapted to the particular requirements of each company; and
- secondly, technology is developing fast and dynamically, constantly changing what can be considered state-of-the-art security measures.

As a result, law does neither provide for particular measures as such nor for particular

solutions, but instead defines targets to be met, while leaving competence of decision for the means mostly to the administrative personal in charge. Moreover, legal terms such as 'adequate' require proportionality assessments of risk and counter-measures, which will lead to defining different security requirements in different environments. Further technical guidance is provided by the extensive documentations issued by Bundesamt für Sicherheit in der Informationstechnik defining security standards and processes kept up-to-date constantly (in particular: Grundsatzkataloge⁴⁶) and by Bundesnetzagentur⁴⁷.

⁴⁶ https://www.bsi.bund.de/DE/Themen/ITGrundschutz/itgrundschutz_node.html.

⁴⁷ http://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/Telekommunikation/Unternehmen_Institutionen/Anbieterpflichten/OeffentlicheSicherheit/KatalogSicherheitsanforderungen/KatalogSicherheitsanforderungen.pdf?__blob=publicationFile&v=2.

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Consequently, guidance to implement BYOD models will need to be provided on a rather abstract level as well by following the same principles as the underlying legal framework: illustrating the legal objectives to be met while leaving the choice of technical solutions in detail to responsible administration staff, as only these will be able to identify the optimal solution for a particular environment at any given point in time.

The following guidelines and check-list are supposed to provide guidance in evaluating the general framework for implementation of BYOD models. For the reason given above these cannot be considered exhaustive, but need to be adopted, shaped and developed into a security concept.

5.1 What needs to be considered? - A basic check-list

- | | |
|--------------------------|---|
| <input type="checkbox"/> | Has implementing a BYOD model been discussed and jointly developed with the IT security department or external IT experts? |
| <input type="checkbox"/> | Have the data protection commissioner of the company been consulted? |
| <input type="checkbox"/> | Has the employee organisation (Betriebsrat) been involved? Is there an agreement between the employer and the employee organisation on introducing a BYOD model? |
| <input type="checkbox"/> | Have the data protection commissioner of the company been consulted? |
| <input type="checkbox"/> | Did the employee agree to participate in a BYOD-policy freely and autonomously?
➔ BYOD needs to be an option with true alternatives remaining. Informed consent should be given. |

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☐

Has this consent been documented?

☐

Are there clear, easily understandable and comprehensive policies on BYOD use which have been available to the employees before consenting and remain accessible for him afterwards?

☐

Did the employees sign for having understood these policies?

☐

Have the employees been trained according to these policies?

☐

Did the user consent to maintenance / administration of his device by company representatives?

☐

Has this consent been documented?

☐

Are there clear, easily understandable and comprehensive policies on what actions company representatives may or may not undertake on the employees' device? Have these policies been available to the employees before consenting and do they remain accessible for them afterwards?

☐

Did the employees sign for having understood these policies?

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<input type="checkbox"/>	Has the use of private devices for work-related purposes beyond those explicitly allowed in the BYOD policies been explicitly prohibited to the employees?
<input type="checkbox"/>	Is negligent use of the device defined and prohibited by clear guidelines known to and accessible for the employee?
<input type="checkbox"/>	Is there a comprehensive list of all devices participating in the BYOD model and their technical particularities?
<input type="checkbox"/>	Is the BYOD model organisationally / conceptually limited to processing 'low-risk' ⁴⁸ data? ➔ The future BYOD model will be established in processes and environments in which no security / privacy sensitive data is processed.
<input type="checkbox"/>	Is the BYOD model legally / contractually limited to processing 'low-risk' data? ➔ The future BYOD model will contractually oblige employees not to process security / privacy sensitive data.
<input type="checkbox"/>	Is the BYOD model technically limited to processing 'low-risk' data? ➔ The future BYOD model will technically hinder employees to process security / privacy sensitive data.
<input type="checkbox"/>	Can data storage on the user device conceptually and technically be prevented? ➔ Preferable solution. E.g. IMAP for email.

⁴⁸ Both in terms of economic value and of privacy.

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- ☐ If data need to be stored on the user device: are frequent synchronisations / back-ups of the entire company data guaranteed?
➔ Particularly relevant if user leaves company or loses device.
- ☐ Is there encryption of any data stored on the device in accordance with the security guidelines in force issued by Bundesamt für Sicherheit in der Informationstechnik?
- ☐ Are there safeguards that prevent accessing / copying sensitive data by / onto the device at place?
- ☐ Are there comparable software / hardware back-up environments in case of breakdown / loss of user device to continue work-flow?
➔ BYOD significantly increases diversity of technical environments, which may cause difficulties if employee uses proprietary tools.
- ☐ Has a separate profile been installed for professional use of the private device?
- ☐ Are there technical means preventing the employee from accessing company data / services with any other than his professional profile?
- ☐ Are there any safeguards to hinder third parties outside the company to access the separate professional profile?

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☐

If company data needs to be stored on the device, are there safeguards to ensure that such data will be stored physically (not only logically) separated from any private data?

☐

If company data needs to be stored on the device, are there safeguards to ensure that such data will be stored on the device only?

☐

Are there safeguards to ensure that company representatives cannot access any private data?

☐

Are there safeguards to ensure that company data cannot be accessed from any other profile than the professional profile?

☐

Are there safeguards to only allow strong passwords on the professional profile and possibly further safeguards for access control?

☐

Has the user been provided with the latest security software? Is this software maintained by the IT security department on a regular basis?

☐

Can cloud-computing / transfer of company data into a cloud by applications / the user effectively be prevented?

➔ Smart phones which compulsory make use of cloud computing should not be allowed to participate in BYOD models.

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Are communications between different machines / company systems and the private device encrypted?



Is the history of entering, altering or deleting data recorded by suitable software provided by the employer?



The software would need to distinguish between professional and private use of the device (which ideally should be achieved by different user profiles), as oppositely any private entering / altering / deletion of data may not be recorded together with such actions of professional nature to protect privacy of the employee.



Are there safeguards to prevent data loss?



Are there safeguards to prevent the employee from using any software not incensed for commercial user?



Is the software accessible via the professional profile licensed and un-modified?



The latter becomes relevant particularly for smart phones and so-called 'jail-breaks'.



Has there been established a BYOD help desk?



Has there been established a BYOD risk management?



Has there been established a BYOD security concept?

5.2 What can be done? - 10 Guidelines

The following ten guidelines may appear helpful to implement a BYOD environment compliant with the European and German legal framework:

- Generally, provision of company devices, which allow (limited) private use should be considered an alternative, as such model may maintain the majority of advantages of BYOD while avoid the risks involved by preserving exclusive control of the employer of the security infrastructure of the device.
- BYOD practice should be limited to the minimum extent considered necessary, to limit risks of liability in an environment in which for mere factual reasons control of the company remains limited.
- BYOD practice should be regulated by internal binding guidelines, which define precisely and exhaustively which data / processes are suitable for BYOD and which not.
- Employees participating in BYOD models should be provided with written summaries of the aforementioned rules and sign for knowledge and acceptance of these rules.
- The employer is obliged to guarantee IT security on the employee's device, which requires both an agreement with the employee entitling the employer to carry out the necessary steps and the free provision of software, hardware and services necessary (firewall, anti-malware protection, etc.; compare guidelines of Bundesamt für Sicherheit in der Informationstechnik). The employee cannot be obliged to participate in BYOD.
- Wherever possible, separate profiles should be used for the professional use of a private device. The employer needs to take care, that within these profiles no software is used, which is either not licensed at all or not licensed for commercial / professional use. It is recommend, to explicit forbid the employee to use / install such software within the professional profile on the private device. Allowing such a second profi-

⁴² Frank Koch, „Arbeitsrechtliche Auswirkungen von „Bring your own Device“ - Die dienstliche Nutzung privater Mobilgeräte und das Arbeitsrecht“, ITRB 2012, 35, 38.

⁴³ Frank Koch, *ibid.*

⁴⁴ Frank Koch, *ibid.*

6. Conclusion

le, however, again is a voluntary act of the owner of the device, to which the employee cannot be obliged.

- Wherever possible, transfer of data onto the private device should be both legally and technically limited. VPN tunnelling to company servers is strongly recommended.
- If company data needs to be stored on the private device, the company has to ensure sufficient encryption, where adequate and has to provide the necessary crypto (key) management system.
- Economically sensitive data usually cannot be processed on private devices, due to the lack of possibilities to implement security measures comparable to company owned devices (e.g. lack of exclusive company administration rights).
- Personal data on private devices should be avoided, wherever possible. Personal data of special categories – such as patient's data – cannot be processed in BYOD environments due to the security risks involved.

BYOD certainly is a very interesting approach, both for employers as for employees. The technical and legal issues involved, however, are important. While data processing needs to be strictly limited to non-sensitive data in most cases, and a high level of data security needs to be guaranteed by the employer (exclusively), BYOD models may in practice lose some of their charm. The fact that the employer remains fully and solely liable for all data processing on an employee's device, while having only limited access to / control over these devices represents a legal threat which should not be underestimated. Before introducing BYOD policies, it should be considered whether providing employees with freely chosen company devices (which may be used privately as well) would not provide a simpler, but equally effective solution.

If a BYOD model should be introduced, it requires profound technical safeguards and comprehensive legal agreements with the employees from the beginning. These agreements are however feasible and a proper preparation ex ante helps employers as well as employees to understand benefits and risks of BYOD.



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