



**MULTICLOUD  
COMPLIANCE  
PLATFORM**

»» **ACT ALWAYS SO  
AS TO INCREASE  
THE TOTAL NUMBER  
OF CHOICES!** ««

Heinz von Foerster »» The cybernetic Imperative

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The era of digital transformation is developing a tremendous dynamic – inspired by the imagination of innovators and fueled by the considerations of the users. Digital business horizons are being debated again along the lines of feasibility, financeability and meaning, while the current of change has long since captured everything that ever had technological value. These are not good times for yesterday's investments. It is the best time though to break up monopolies and get something essential in return: Freedom of choice.

Deepshore is developing revolutionary compliance technologies for an era beyond today's premises. As a brainpool and innovations lab, we focus on the potential of distributed networks, infrastructures, and platforms. We are setting new standards for enterprise information management with our innovative strategies and procedures and pave the way for next-generation business solutions.



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## TENSION AROUND COMPLIANCE: **LOST IN REGULATION?**

Digital transformation is a complex change that affects all types of information systems, business processes, and infrastructure. Legislators also understand the significance of these changes and are busy applying massive regulatory initiatives and measures. Precedents such as the new regulation of cash register receipt archiving in the retail trade show, should there be any doubt, these transactions to be disproportionately strict, rather than considerate.

This can have bizarre consequences. On the one hand, the “lost-in-regulation” feeling creates uncertainty where urgently needed system changes are in order. On the other hand, the demands of the legislators drive proprietary infrastructures and systems over the edge by overstraining them, and thus inadvertently become the engine for technological renewal. However, the guardrails for every investment are clear: Only technologies and solutions that can work 100 percent compliant are and will remain “ready for regulation”.

Regulation is a gold mine around which dubious strategies are gathered: Proprietary systems sell themselves as cloud offerings via SaaS, and large monopolists create new paths into total dependence on them through exclusively marketed services.

A self-determining digital future, as we understand it, looks very different. That is why we developed the Multicloud Compliance Technology: Audit security directly in distributed networks, on a platform that remains within your own jurisdiction. Digital transformation, well thought through to completion.

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### USE CASE: **DIGITIZATION IN THE RETAIL SECTOR**

// A wholesale company operates more than 100 cash and carry markets for restaurateurs in Germany alone. It has been affected for years, like all German commercial enterprises, by increasingly strict government regulations. Beginning with the first major government intervention, the 2015 mandate to digitally archive cash register receipts, the company's response was proactive with a radical innovation: Instead of using a classic ECM system, compliance storage is accessed using a Big Data search index. This turns a classic archive into a real-time analytics platform with full compliance. The company is thus perfectly prepared for the second legislative wave, the new 2019 compulsory rule to provide a receipt to the customer: Instead of wasting paper, the (all previously registered) buyers receive their receipt as an e-invoice paperless, directly on their smartphones. Quelle is the central big data archive, which can evaluate their sales down to the line-item level and implement yet another customer service without any problems: Upon request, the entire volume of receipts can be sent directly to the customer's tax accountant. //

# DISTRIBUTED TECHNOLOGIES: GAME-CHANGER IN DIGITAL TRANSFORMATION

The current phase of digital transformation is often reduced to a single buzzword: Cloud. This abbreviation can create dangerous misunderstandings. It is not a question of escaping into an all-around hosted world, but of using their applications and valuable mechanisms in a self-determined way. Because the principle of distributed systems is the only sensible foundation for the high-speed trip through digital transformation.

Being "cloud-ready" is a matter of architecture, not hosting: Infrastructures, platforms, applications and services, processes and resources are organized in a fundamentally different way in distributed networks. Smart scaling, automated deployments, new standardized procedures, and interfaces such as S3 and Microservice architecture not only create cost efficiency and sustainability, but also completely new integration possibilities and freedoms.

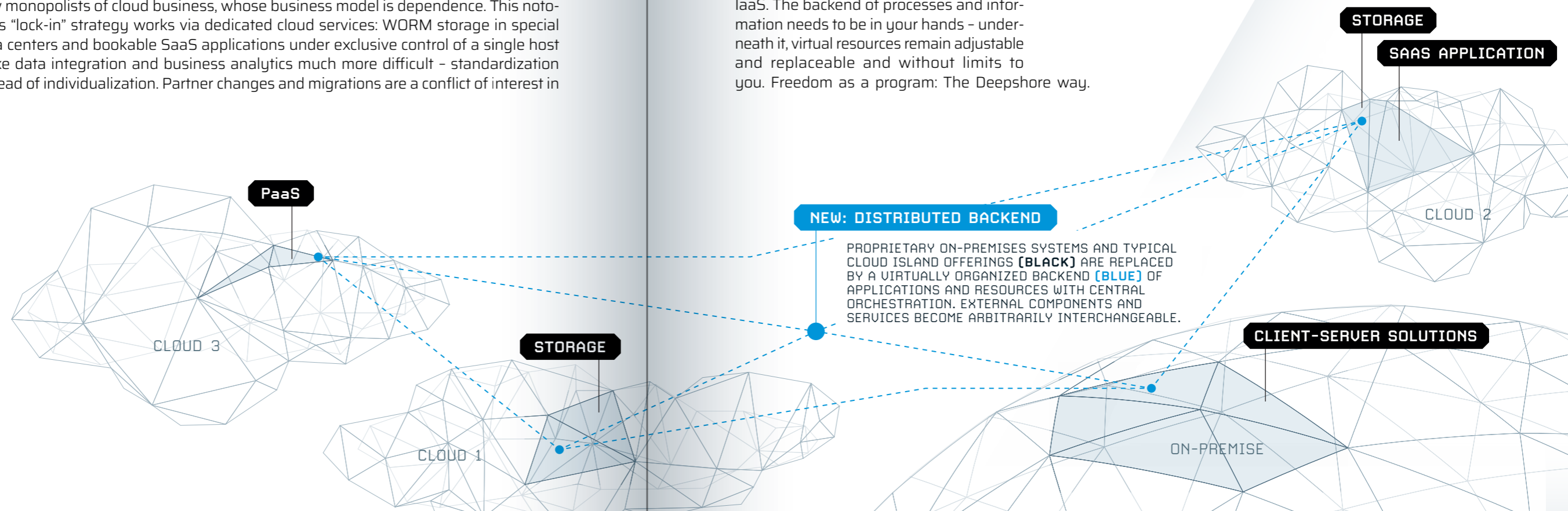
CIOs must, to take advantage of these opportunities, defend their interests against the new monopolists of cloud business, whose business model is dependence. This notorious "lock-in" strategy works via dedicated cloud services: WORM storage in special data centers and bookable SaaS applications under exclusive control of a single host make data integration and business analytics much more difficult - standardization instead of individualization. Partner changes and migrations are a conflict of interest in

## USE CASE: CLOUD MIGRATION

// A company with highly frequented databases wants to get away from maintaining its own data center: The move to the cloud is supposed to dramatically reduce infrastructure and operating costs and open new, competitively priced scaling opportunities, ahead of the competition. The target platform chosen is the Google Cloud, which intensively advertises its matching database counterpart: The "Google Cloud Datastore" is a fully managed NoSQL database service. What Google doesn't tell you: The technology is Google-exclusive, offering a one-way ticket only. If you should decide to change your cloud host or go back to a data center, you will have to expect expensive migration scenarios. The company decides otherwise - for a self-determined solution based on distributed database technology, which is also used in the Deepshore stack. The Google Cloud is booked without its database service, the path to the cloud is steered via a replication mechanism of their own distributed database. The migration takes place completely independently after the source and target database nodes are connected and can be repeated at any time without problem. The vendor lock-in has been avoided. //

this structure and are therefore not planned for. Migrations in the cloud can become a nightmare for large volumes, access options and bandwidths are more limited than in many on-premises environments.

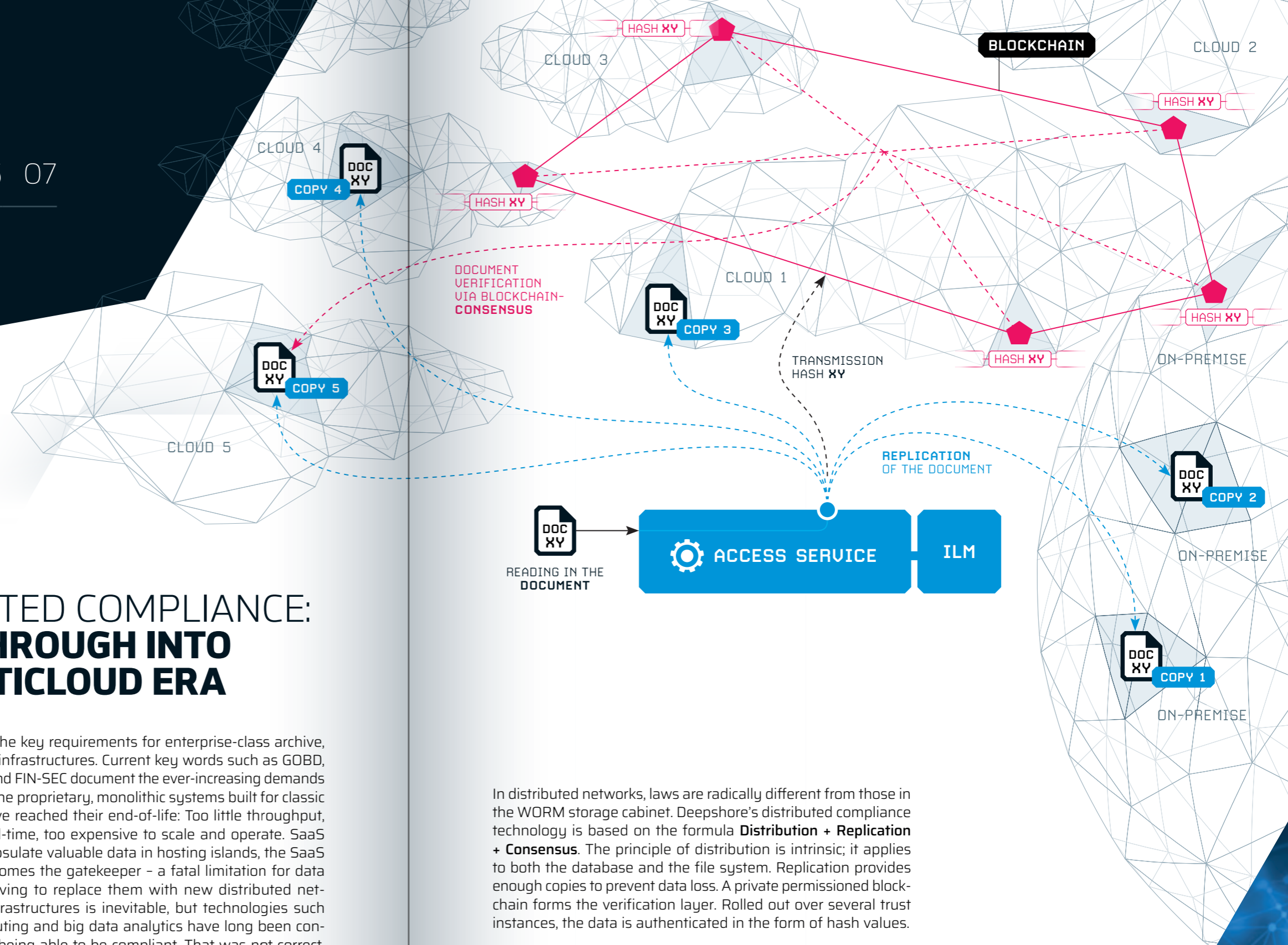
Hybrid infrastructures and multicloud approaches can be a way out. In any case, they require a cloud-agnostic approach that thinks through subsequent relocations. Don't think systems and solutions into clouds, think across clouds! Move the coordinate system away from SaaS on to PaaS and IaaS. The backend of processes and information needs to be in your hands - underneath it, virtual resources remain adjustable and replaceable and without limits to you. Freedom as a program: The Deepshore way.



## DISTRIBUTED COMPLIANCE: BREAKTHROUGH INTO THE MULTICLOUD ERA

Audit security is one of the key requirements for enterprise-class archive, ECM and DMS infrastructures. Current key words such as GOBD, GDPR, HIPAA and FIN-SEC document the ever-increasing demands of legislators. The proprietary, monolithic systems built for classic compliance have reached their end-of-life: Too little throughput, hardly any real-time, too expensive to scale and operate. SaaS solutions encapsulate valuable data in hosting islands, the SaaS application becomes the gatekeeper - a fatal limitation for data integration. Having to replace them with new distributed network-based infrastructures is inevitable, but technologies such as cloud computing and big data analytics have long been considered as not being able to be compliant. That was not correct.

The first step on the way to the Deepshore Compliance Cloud was to define compliance correctly: Not as a storage standard, but as a system of technical and organizational measures. It's not important where the data is stored - but what you can do with them is crucial.



In distributed networks, laws are radically different from those in the WORM storage cabinet. Deepshore's distributed compliance technology is based on the formula **Distribution + Replication + Consensus**. The principle of distribution is intrinsic; it applies to both the database and the file system. Replication provides enough copies to prevent data loss. A private permissioned blockchain forms the verification layer. Rolled out over several trust instances, the data is authenticated in the form of hash values.

Our distributed compliance system is the way out of old device parks and questionable SaaS offerings. The cloud-ready architecture reduces costs enormously and creates new scope: it can be deployed on-premises, in hybrid environments and on a pure cloud basis - fully integrated and with end-to-end information lifecycle management.

# MULTICLOUD ARCHITECTURE: MANAGEMENT BY ORCHESTRATION

The Multicloud strategy is your personal declaration of independence in this digital transformation. Its core principle is to shift the infrastructure management and business logic for your business processes to an independent layer that lies above concrete cloud resources and remains completely in your hands. You will continue to drive digital transformation in its full depth starting with this foundation.

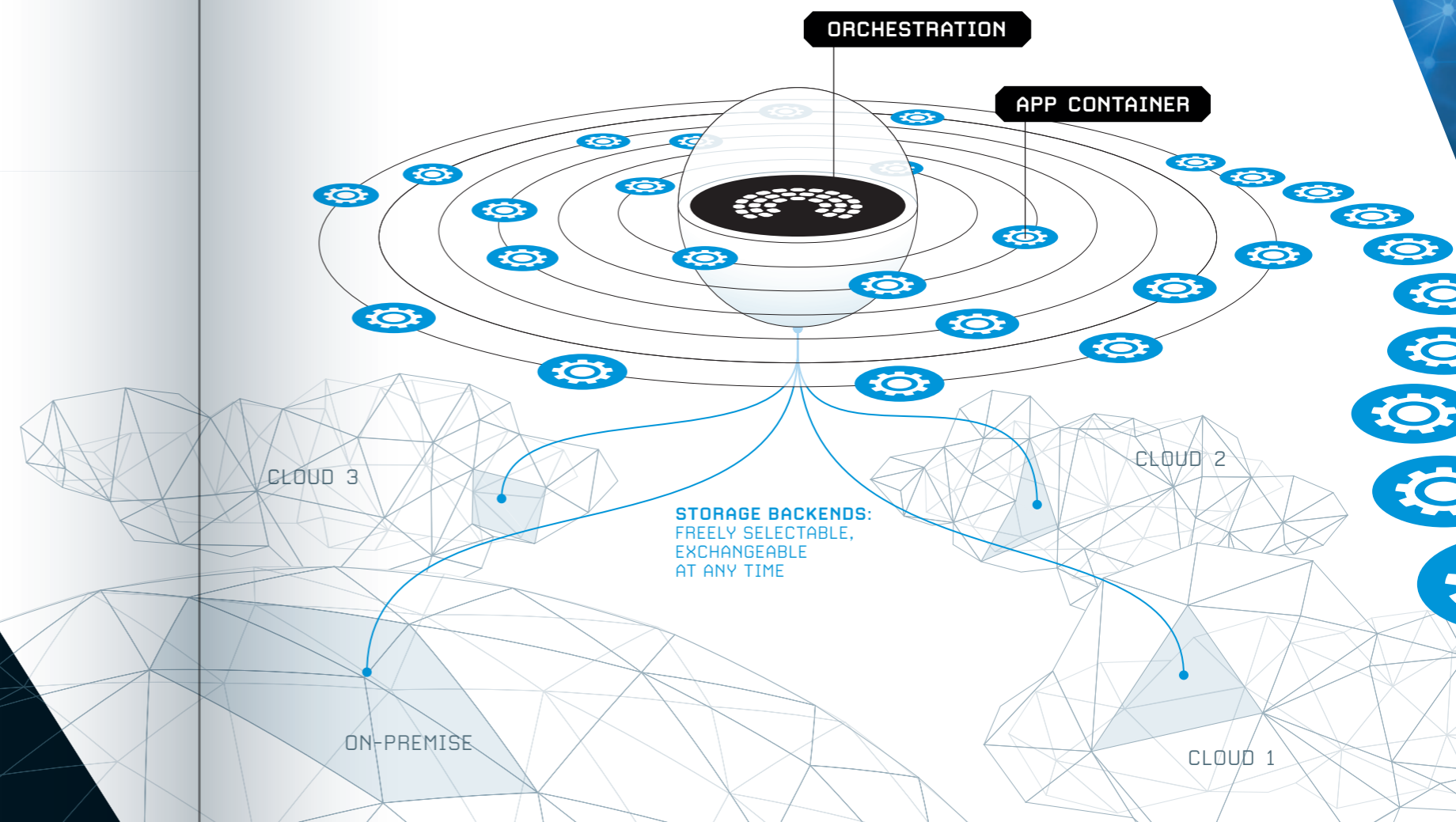
A major advantage of the Deepshore Compliance Platform is the “contain-erization” of the backend infrastructure via Docker technology. This creates a system of micro-operating system environments for services and applications that can run in any cloud resource. These containers are orches-trated via Kubernetes or OpenShift. If you want to change providers, migrations are unnecessary, you can simply move the container to another cloud.

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The Deepshore Multicloud Technology thus creates a completely new framework for the mapping of individual business cases. For instance, complex application landscapes in the form of Microser-vices can be organized and reused as a pool of freely combinable individual functions. The imple-mentation of concrete industry applications is thus extremely simplified, the business intelligence and the compliance rules remain completely decou-pled from the frontends. And the core of your solutions will remain a long-lasting, well-pro- tected investment even in the face of technological changes.

## USE CASE: COLLABORATIVE BUSINESS IN BANKING

// A global financial services provider operates in large multinational projects with so-called syndicated loans. To this end, the company works as a partner in several different consortia with distributed risks and rewards. The core of collaborative business in this segment is the sharing of data and contracts beyond the boundaries of one's own infrastructure - with the strictest requirements for protection, security, and immutability of sensitive data. The financial services provider decides to take the path of radical renewal: The collaboration platform will be built on the Deepshore Multicloud Compliance platform as a distributed infrastructure. Both cloud resources and on-site systems can be freely integrated and linked into the partner network. The platform applications are operated as container applications and transparently orchestrated via Kubernetes. Data and documents are replicated and their immutability is ensured in the security layer using blockchain technologies - an incorruptible and natively distributed trust instance. Partners in the consortium have the choice to become part of the platform themselves or to use it only as a service. Compliance with the standards of the future, freedom in a new dimension. //



## **ADDED VALUE:** REAL-TIME DATA AS FUEL FOR YOUR BUSINESS

Investments in data archives subject to compliance obligations, ECM systems and document management applications are further burdened by the growing demands of regulators. These costs are usually not offset with an adequate return on investment, especially when these applications are not part of the core business.

In fact, much of the data and information collected for compliance reasons are of outstanding quality: They are all highly structured, complete and an extremely precise reflection of current business processes. Once available, compliance data will be the ultimate source for future-oriented customer services and live business analytics applications. The end of nightly batch processing and the associated loss of timeliness is a quantum leap, especially for traditional data warehouse solutions.

The Deepshore Multicloud platform is based on these native real-time processes. The infinitely scalable data pool is made available to any orchestrated application via Microservices - without transformations and migrations, without unnecessary "cleansing" and with consistent enforcement of compliance rules across all applications. Pure added value, free, and at your disposal.

## USE CASE: **NEURAL NETWORKS FOR SPECIALI- ZED BUSINESS PROCESSES**

// An insurance company has completed the digitization of its specialized business processes and archiving systems. At the heart of enterprise information management is now a big data-enabled Compliance Platform. The daily intake of new documents, including important and time-critical damage reports now becomes the new bottleneck. The structure of the incoming documents does not allow a fully automatic qualification. The solution is in a revolutionary class of its own: A neural network is trained, as an "observer" of the classical processes, in such a way that in the future it can pre-qualify incoming documents with precise scoring based on acquired neural connections. A profitable added value model just happens to be created at the same time: The pre-trained network can be marketed (as a model, without the original documents) to other interested parties with similar processes. The further trained network then returns into the operation with significantly increased performance. All this in full Compliance - a system with many wins and an attractive ROI. //

# OPEN SOURCE AND SUBSCRIPTIONS: THE END OF CLASSIC LICENSING MODELS

A lot changes, when technologies become outdated. The business model of classic on-site technologies was based on the lucrative mix of large hardware investments and meticulous licensing throughout all features or clients. Scaling multiplied the expenditures and regular audits tracked, recalculated, and billed for license gaps. The era of digital transformation has replaced these investments with hosting – for resources, functions, and users. And it becomes really interesting where open-source solutions are used.

Many open-source technologies offer companies more decision-making security than proprietary developments ever could. They are completely transparent and comparable, do not hide business secrets, do not create monopoly dependencies and are often technologically far ahead. As they are based on stable communities, they improve much faster and respond more openly to changes and new requirements.

We choose to use open-source components and databases as much as possible on our Multicloud Compliance Platform. If you decide on our platform, you will leave licenses and audits behind and switch to a fair, transparent system of subscriptions: A usage model where costs are clearly based on traceable functionalities, current scaling, and the required service level. Even independent operation without management, maintenance and service agreements is possible. The result is a significant reduction in total costs: For databases with maintenance subscriptions, for example, up to 20 percent of the cost of commercial solutions. That too is what we mean by freedom.





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