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WHITEPAPER

Corporate Data Organization – How to tune the digital twin to unleash the data-driven firm!

Establishing data-driven workplaces within the company

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Preface

Corporate Data Organization: The success factor for data-driven transformation

Corporate Data Organization is about productive data governance, which means to create the right data-infrastructure to integrate productivity and compliance smoothly for more profitability.

According to an analysis of PwC data driven companies are 23% more profitable than the average! But where to start? What is of strategic importance in order to stay ahead sustainably?

In this whitepaper, we offer managers valuable insights into the potential of corporate data organization design to actively and successfully shape data-driven transformation by the right data infrastructure.

A particular focus is placed on data driven integration of digital workplaces into the matrix of business processes and organizational structure; clearly aligned by data ownership and the data management team.

We take a practical look at how this concept can be implemented along the SAP ERP system by closely interlinking the sub-areas of Data Productivity Governance (DPG) and Data Access Governance (DAG) along workplaces in the various organizational units. This results in high-performance data organizations to unleash digital productivity sustainably.

Supplemented by an inspiring use case and specific recommendations for action, the whitepaper offers practical approaches that companies can use to get started unleashing the power of the digital organizational twin right away.

Key questions

Why is the business not unleashing productivity, despite large amounts of data?

How does a lack of master data quality affect processes?

What are the ingredients of Corporate Data Organization?

How can master data and transaction data be optimally linked?

What advantages does a smart data organization offer?

How do Data Access Governance and Data Productivity Governance help to use data more efficiently?

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1. Introduction

Time critical processing of customer orders is delayed by fragmented data flows all along the order processing chain?

- Sales is struggling to provide the best offer in terms of customer satisfaction and cost efficiency?
- Purchasing is not exploiting its full potential (e.g. because it is difficult to plan the purchase of key parts due to missing data)?
- Delivery dates promised are wrong, because the date your ERP suggests simply does not fit with reality?
- Work preparation is time-consuming because CAD drawings, ERP routings and production planning are not integrated digitally in a smart way?

Finance & Compliance departments are often dejected because

- Regulations around data issues are not covered
- Reports are often wrong
- Invoices are sent back because of wrong company addresses

The origin of these and many other difficulties can most of the time be found in poor quality of your Corporate Data Organization. The result:

- Competitive disadvantages due to slow processes (time to market as a competitive factor)
- Inadequate decisions because of incorrect or incomplete data and therefore the wrong basis for analysis
- Tedious duplication of work and rework become necessary along the entire process
- Enormously high additional costs every year
- Huge development potential in the area of digitalization and automation is left untapped

Unlike in the analogue past, companies must not neglect sustainable corporate data organization in today's digital disruptive environment. If they want to get and remain competitive in the long term, they have to invest in it in order to:

- Outcompete other data-driven companies on productivity
- Implement AI driven solutions
- Solve the problem of skilled workers shortages
- Release themselves from sometimes excessive regulation (ESG, GDPR, NIS2, ...) by smartly integrating them in automated processes

Many companies are still stuck in the analogue age or have not made the leap to the digital age. A major reason for that is that organizational structure is seen as pregiven, passive and digitally fragmented. Therefore, it acts as an invisible and powerful brake on end-to-end processes, which only causes high costs. Its potential leverage function thus remains unused, and companies miss out on enormous earning opportunities.

The concept of Corporate Data Organization (CDO) offers a solution. Thanks to its holistic and modular applicability, CDO enables a change towards more efficient business processes and an accelerated digital transformation of the company; driven by the business data of your ERP system.

The key is the digital understanding of the **organizational structure** (Business Units, Business Partner, Products and Services) and the associated invisible rules, roles, rights and corporate governance to foster productivity and risk reduction all along the **business process.**

2. The need to re-design the organizations digital twin for the data-age

Many companies involved in the digital transition process correctly focus on analyzing *transaction data* along the analogous value chain (= process organization) such as optimal stock levels, material flows or optimal setup times in order to find approaches for process optimization. Unfortunately, many of them are not aware of the necessary redesign and reorganization of the organizational structure (company structure and hierarchy) following the concept of the digital organizational twin at the same time. Why is this important?

The switch from a pure people business to a data-driven people business: In former times, people at workplaces were assigned tasks by people related to performance and governed by organizational rules. Mainly people were responsible to organize and execute the assigned tasks. Grey zones were more or less well resolved directly between them. BUT, the more efficient, digital and automated processes are designed, the more this inter-action between people gets replaced by automated tasks driven by data input, automated data analyses and data output by software-robots.

Aside smart people who are still important, but in a different setting, the fine-tuning of the data structure gets strategic because it leads to a quantum leap (small change with big consequences).

3. Becoming a data-friendly company

CDO is initially based on the organizational structure, as mapped in the SAP system. These are interconnected organizational units (company codes, plants, …) with assigned workplaces and the correspondent roles.

The aim of CDO is to create the right digital infrastructure to ensure that employees use the right data at the right time and in the right quality. Physical end-to-end-processes (e.g. customer order management) are driven by the perfect data logistics along the perfect data organization. This is done by designing the right data products for a data driven interaction between people and software-robots for productive and compliant value chain processes (employees and software-robots as nodes in a network of productive data). Therefore, the data has to be as unambiguous as possible in order to perfectionate automated

decisions, processes and AI. Fuzziness concerning data needs rare expert knowledge and slows down digitalization and automation which means less productivity.

Important in the digital age is the fact that workplaces for people and robots are embedded in a network of master data and transaction data via corresponding roles and rights (pro-active: the right to do something beside the restrictive side of rights) and the connected applications based on data products. They have to be interlinked as exact, streamlined, cost-efficient and secure as possible.

4. Corporate Data Organization

4.1. Basic idea and components

In the optimally aligned CDO, the requirements of corporate governance (organizational structure) and the optimization of processes (process organization) perfectly complement each other from the perspective of digitization and automation. This means that the master data organization (static basic data on operational objects and authorizations) as the digital twin of the organizational structure, which is responsible for effectiveness, efficiency and compliance, becomes the key driver for business models. It enables the effective, efficient and secure handling of company data by systematically integrating the rules of good corporate governance and strategic decisions about the network of master data objects into operational processes driven by the flow of transactional data.

In order to enable efficient data logistics along the business processes on the basis of perfect master data, integrating corporate governance rules and processes have to be brought into an integrating CDO concept, which comprises the following components:

- Data Governance Strategy (Data Access Governance – DAG & Data Productivity Governance – DPG)
- Data Management (Team: Data Ownership Framework; Tools: Data-Catalogue)
- Data Governance Implementation Roadmap
- Data-driven workplace (authorizing roles and rights)
- Data objects (business partners, material, etc.)
- Data tools (business rules, AI, bRobots®, workflows, etc.)

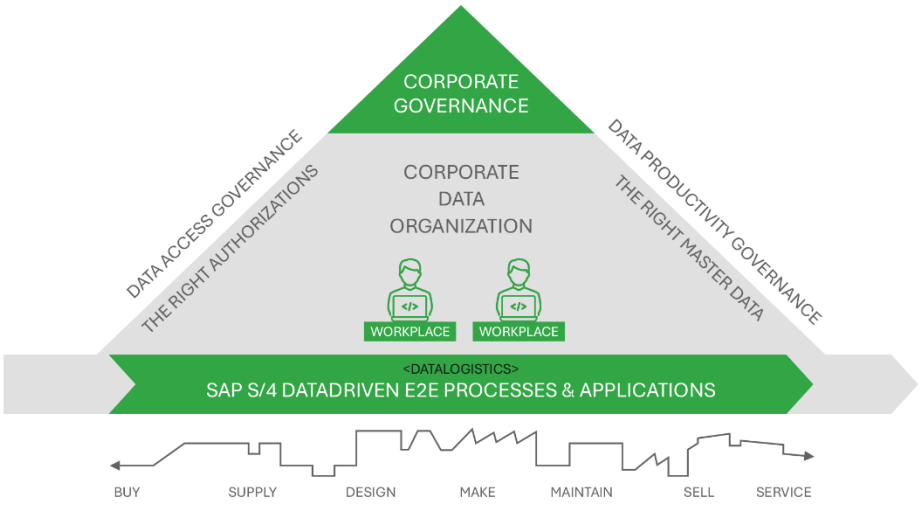

Figure 1: Interaction of individual areas in data organization governance

4.2. Data Organization Strategy

The strategic goal of the data driven company must be to unleash the power of data for more productivity and to stay compliant at the same time. Therefore, data productivity governance (DPG) and data access governance (DAG) have to be linked by an integrative approach and integrative monitoring.

Data Access Governance (DAG)

Data Access Governance refers to the permissions, policies and technologies that ensure secure, controlled and compliant access to data within an organization. The aim is to ensure that only authorized persons or systems can access sensitive or critical data. A central component of DAG is transparency regarding data access, including tracking and analyzing who has accessed which data.

Classical understanding of permissions (the right to use an application) is focusing on restrictions because of security reasons. In the digital age it is equally important to apprehend the permissions pro-active and positive as an indicator for expertise to foster productivity.

Data Productivity Governance (DPG)

Data Productivity Governance describes the framework conditions and practices that ensure that data is used as a strategic productivity asset in an organization. The focus is on the quality and efficient use of data to promote data-based decision-making and innovation. DPG addresses the need to systematically manage data resources while optimizing processes to avoid redundancies or inefficiencies.

4.3. Data Management

Who owns the data set? A data ownership concept is essential for establishing a CDO in order to bring transparency to the data organization, responsibilities and accountabilities. With the data owner as the control center, it is possible to implement data management content across processes and create a data culture that builds trust and confidence. The composition of the team of people and AI is reflected in the

qualitative and quantitative characteristics of the roles. Digital assistants (business robots) provide support for the lean, direct and efficient integration of the individual roles into the operational process.

Data Ownership Framework:

The Chief Data Officer in his role as **Data Executive** is responsible for the company-wide processing of data and is therefore the highest position in the CDOG hierarchy. His areas of responsibility and accountability are in DAG as well as in DPG.

The **Data Owner** is responsible for determining access to the assigned data object, as well as regulations on processing procedures and data quality. As the central point for the respective data object, they must be involved in decisions relating to the data object.

The **Data Steward** covers the operational area of data management and also performs cleansing activities, data quality analyses, compliance-relevant checks and documentation in accordance with the data owner's specifications.

In process-controlled data maintenance, a **Data Creator** reports the initial basic information for a data set at the start of the data lifecycle. The data creator is therefore responsible for the correctness and the necessary requirements of the information provided, without having any other areas of responsibility in the data ownership concept.

The **Data Custodian**, who is often structurally assigned to the IT department, is responsible for the technical aspects of data protection and management. This includes, among other things, the provision of the infrastructure and technical aspects of data security (access security) and data management.

The role of **Data Customer** can be assumed at all hierarchical levels of the organizational structure. In the data ownership concept, these end-users have no responsibility in the areas of DAG or DPG, but are exclusively users of the data provided for further company processes or reports.

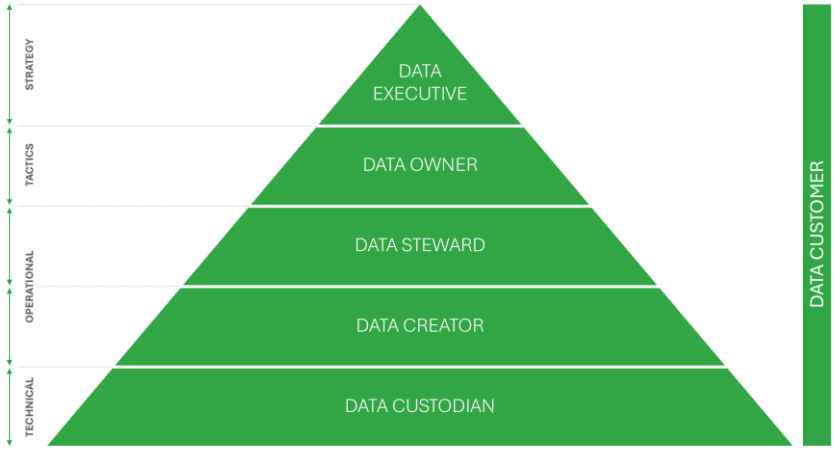

Figure 2: Data Ownership Framework

Data-driven transformation:

What companies themselves can do

Assessment: Is your company proficient in handling data?
In daily operations, there are often signs that data usage is not running smoothly. Get an overview of the current digital state of your business processes with an initial check.

Topic	Does the following question apply to your company?	Yes/No
IT system access	Does your IT department already feel uncomfortable when assigning permissions?	
Compliance	Are you *not* absolutely sure that you are adhering to all compliance regulations?	
Orders	Are valuable hours lost between master data creation and the actual order placement?	
Segregation of Duties	Do your employees have a broad portfolio of tasks that jeopardizes the segregation of duties? Does this lead to unacceptable conflicts in segregation of duties?	
Business deals and departments involved	Do you have to wait a long time for input from different departments before you can sell your product?	

If you have entered more than one “Yes”, you should act. It helps to take a closer look: Focus on one critical area.

- ✓ Put the problems of your specialist departments on the same table and promote communication between the relevant stakeholders. Just the mental leap of building bridges between DAG and DPG can break entrenched thought patterns.
- ✓ What intentions and requirements drive the individual departments?
- ✓ What challenges do the specialist departments face?
- ✓ Find a common denominator, through organizational definitions or neutrally as resource-saving support in the system.
- ✓ Start at one workplace in the critical area.

Professional support can help you optimize your data organization. A competent IT service provider can support you in establishing the corporate data organization according to your company's requirements. Cooperation helps to ensure the quality of the master data, to design the data-driven company in line with requirements and to explore the possibilities of scalability.

4.4. Implementation Roadmap & Components

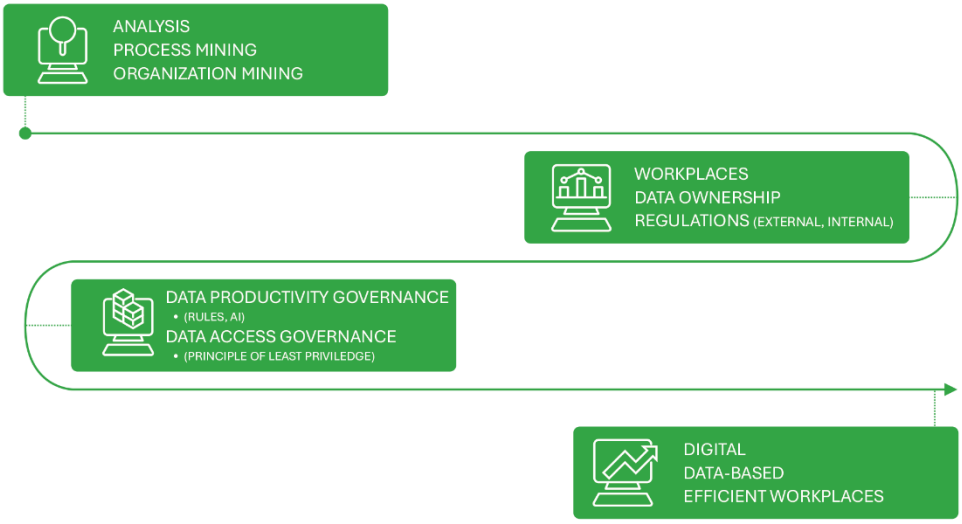

Figure 3: building the digital twin interacting with automations: from analysis to a digital workplace

Lean, analysis-centric project and organizational approach

The analysis and mapping of the data organization does not start from scratch. The basic structures are defined by the organizational units of the ERP system. Although some companies use SAP organization management, GRC tools or similar, they mostly use these for the selective mapping (snapshot) of a structure of their data organization that is constantly changing.

The decisive factor here is the change of direction away from a static image of the organization towards a dynamic measurement of activities in real time.

In analogy to process mining, the data organization can be examined automatically. The aim is to obtain a clear and correct picture with as few resources as possible. Ideally, the analysis of the structural and process organization requires as few workshops, surveys and documentation as possible by automatically analyzing structures and processes based on existing data and intelligent mining tools.

Minimum principle as strategic guiding principle

The “zero trust” approach in DAG refers to a minimum assignment of rights (“least privilege access”). According to this principle, users can initially only access the data that is absolutely necessary. In addition to minimizing risk, this approach can also serve to achieve efficiency and cost targets from the perspective of the DPG. An implementation is based on the following guidelines for the design of workstations:

- Analyze actual tasks
- Operationalize regulations
- Rules instead of roles
- Automated machines instead of people for routine tasks
- Preventive instead of downstream risk mitigation

Data driven Workplace as Integration hub

For sustainable digitalization through data-driven business models, “data-based workplaces” must be addressed as a hub and integration point between the process and corporate governance requirements. Each workplace must be optimized to ensure access to the right transaction data (process organization) and the right master data (organizational structure) at the right time, the right digital workplace, in the right quality, securely and with the right performance. Satisfying these requirements results in perfect data logistics, i.e. the specific data for this workplace is optimally connected in the network of workplaces.

From a business perspective, this is lucrative from each perspective: regulated access (DAG) avoids data breaches and seamless data logistics enables enormous savings and process optimization potential (DPG).

Operationalizing this concept requires a lean but strategic approach to data management. Data governance moves from defense to offense. This is achieved by proactively linking the DAG and DPG sub-areas.

When optimizing CDO, each status quo can serve as the basis for connecting DAG and DPG. Companies can therefore either strategically design the CDO concept before implementation or optimize workplaces sequentially.

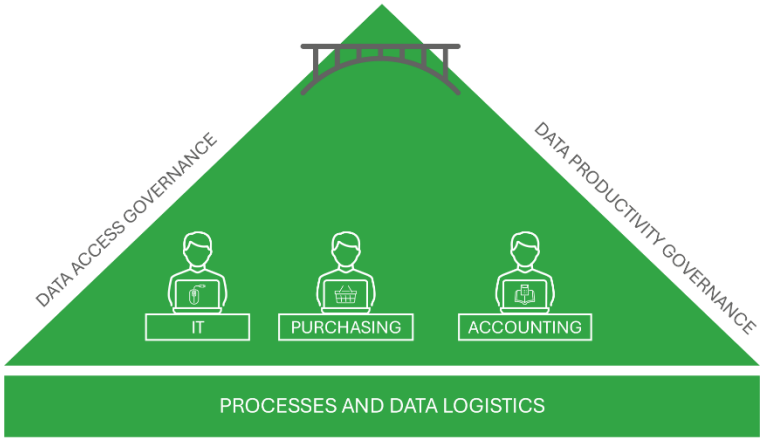

Figure 2: Building bridges between the DAG and DPG in conjunction with the stakeholders involved

ERP master data as a starting and end point

Master data authorization (roles) are a central building block and the ideal place to start. These affect 30-40% of all roles and authorizations, but solve 80% of the problems. A prioritization of workplaces with master data focus is therefore recommended, both for analysis and the implementation.

Data Objects

The core master data objects in CDO design:

- Supplier (Business Partner)
- Employee (Business Partner)
- Accounts

- Material / Service / BOM
- Routings
- Customer (Business Partner)

These data objects and its corresponding content has to be interweaved tightly by the corresponding enablers.

4.5. Enabler: Data products for workplaces as combination of the “6 Rs”

The common tools for designing optimized digital workplaces of a company-wide network between data objects and processes are the “6 Rs”:

1. Regulation as an opportunity

Statutory **regulations**, corporate governance rules and the associated bureaucracy can lead to competitive disadvantages. However, if they are used to improve the quality of decision-making and automation of operational processes, they offer the opportunity for competitive advantages.

2. Role definition for greater certainty of action

Ideally, clear **roles** define the areas of responsibility within the company for being able to act and work efficiently and take pressure off company managers.

3. Access and rights as enabler

The **rights** and authorizations assigned with the roles are often used to avoid security gaps, meet security and compliance requirements and also fulfil the requirements of an audit. In order to design organizations proactively, there needs to be a paradigm shift from permissions as a pure restriction to permissions as an enabler.

4. Risk mitigation

Risk mitigation can be understood in an authorization context as well as in an automation context in order to meet compliance requirements and efficiency targets. Let your risk be approximated to 0!

5. / 6. Rules and Robots

To implement the principles described above, **rules and robots** can act as orientation points or as a automation mechanism. Specific tools assist in the combination of human and artificial intelligence. In certain specifications, a robot can occupy a digital workplace. With defined functional areas and suitable rules and models, robots are able to reduce the frequency of errors, resulting in increasing efficiency and quality. Labor shortage requires intelligent solutions - let robots work for you.

Approach: Implementing the 6 Rs

Each of the 6 R areas can be worked on independently or collaboratively using synergies. An implementation in digital workplaces is no longer a necessary challenge, but an enabler that makes optimizations possible. A consistent view of the six areas, their integration into systems and overarching definitions help companies to build a CDO and thus combine DAG and DPG.

5. Use Case: CDO solution for purchasing

The following client scenario provides an example of CDO's successful deployment.

Initial situation:

In the reference company, master data creation is spread among random employees with incorrectly structured access rights. Information is therefore provided with subjective prioritization. The consequence of the incomplete and/or inadequately maintained data is that purchasing costs (discounts, framework agreements) cannot be reduced or are even significantly increased by duplicates. If the poor quality data is trusted, it is likely that this will lead to incorrect analyses and decisions. If the data is not trusted, workaround processes are established (orders are therefore not consistently mapped in the ERP system, as telephone inquiries or text orders supposedly work faster), which increases the problems for data-driven digitalization.

In addition, workplaces in the reference company are able to create vendor data and perform postings. This creates conflicts of segregation of duties and the company runs the risk of violating accounting regulations.

Although data rights (DAG) and productivity (DPG) can be considered separately in theory, they are closely related in practice.

Solution:

Based on a data organization framework resulting from data analytics with the corresponding DAG and DPG concepts, master data creation is managed via a process in which rules, automation and AI can be integrated based on stakeholder information. Corporate governance rules (effectiveness, efficiency, compliance) are therefore met. Recurring or error-prone tasks and entries are thus prevented, duplicates are avoided, and data consistency is ensured (DPG). With this supporting mechanisms, authorizations can be restricted in many ways (DAG), data quality is increased, compliance is ensured and misuse is prevented. Possible segregation of duties conflicts can be avoided through simple and resource-saving digitization components.

The strategy of considering DAG and DPG together and using synergies via this bridging can be implemented for all workplaces in a company, in parallel or as a sequential optimization.

6. Conclusion

Many companies are already recognizing the great potential of Corporate Data Organization and its sub-areas, Data Productivity Governance and Data Access Governance. The master data organization serves as the digital hub of the company, and its structure is decisive for the success of processes in an increasingly competitive environment.

Current reasons for avoiding CDO approaches are poor experiences and offers of inadequate approaches (monolithic organizational management, overwhelming MDG solutions and the lack of lean DAG solutions). However, for optimal development of data-driven companies streamlined data organization concepts are now available. In addition, solutions and tools for comprehensive data analysis and management are accessible. They enable the establishment of efficient and compliant workplaces along the entire value chain by leveraging productive and secure data. Overall, designing digital data

organizations offers extensive possibilities for creating competitive advantages and overcoming productivity deficits.

7. Want to learn more?

We are supporting companies to create a sustainable competitive advantage through perfectly productive and compliant SAP data. AKQUINET offers a wide range of experience in the field of data organization and data management. We ensure that you no longer have to worry about your data quality and are experienced in a wide variety of starting situations and company sizes. Our know-how offers you the opportunity to develop your company sequentially in the direction of a “data-driven company” and to generate competitive advantages. We have your back in data management and integrate DAG and DPG sustainably into your company.