

# INFORMATION GOVERNANCE AS A COMPLIANCE AND EVIDENCE ARCHITECTURE OF INFORMATION PROCESSES IN EDUCATIONAL INSTITUTIONS

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**Abstract:** *In educational institutions, regulatory compliance is often treated as a documentation task carried out retrospectively in the run-up to audits, rather than being embedded in organizational information processes from the outset. This paper argues that such an approach is structurally limited, as compliance tends to remain reactive, resource-intensive and difficult to sustain if governance obligations are not systematically integrated into process design. Based on an integrative literature review and conceptual modelling, the paper reconceptualizes information governance as a proactive compliance and evidence architecture that structures regulatory obligations directly into institutional process design. Drawing on information processing theory, information governance and organizational theory, it develops a Compliance-by-Process framework that translates multi-level regulatory requirements into process logic, role structures and documentation routines, enabling educational institutions to integrate regulatory demands into their information architecture in an audit-ready and transferable manner.*

**Keywords:** *Information governance; compliance architecture; information processes; educational institutions; regulatory requirements*

## INTRODUCTION

The regulatory environment of educational institutions is neither simple nor static. Data protection law, accreditation standards, quality frameworks and internal accountability obligations together generate a documentation demand that no single administrative unit can absorb without structural preparation. The problem is less the volume of regulations than how they can be integrated into an organization's day-to-day operations. In practice, many view compliance as an external burden rather than an integral part of the organization's information management.

If regulatory requirements are treated separately from process design, organisations concentrate effort on retrospective documentation, parallel data systems and short-cycle audit preparation. Information structures remain fragmented, and compliance workloads expand without commensurate gains in quality or organizational learning (Galbraith, 1973; vom Brocke, Rosemann, 2015; Olt, 2020).

Whether institutions satisfy regulatory requirements is less important than how they do so: the "how" determines whether compliance is structurally embedded or carried as a costly add-on. This intersection remains theoretically underdeveloped; information governance, process management and organisational design in educational settings have received limited combined attention in the literature (Wilmers et al., 2021; Eickelmann et al., 2024).

This paper contributes to the literature on information governance and edu-

cational management by developing a prescriptive framework that translates multi-regime regulatory obligations into scalable process design specifications for educational institutions. The paper addresses the following research question: How can multi-level regulatory requirements be translated into the process design of educational institutions in such a way that compliance is built into organizational information processes as a structural feature, instead of being handled downstream as an added burden?

### RESEARCH METHODOLOGY

Methodologically, the paper combines an integrative literature review with conceptual modelling. Findings are not only synthesized; they are carried forward into a prescriptive framework from which governance principles can be derived. Technically oriented articles and sources focused exclusively on commercial enterprises were excluded. The following table (Table 1) summarizes the key parameters of the literature search.

*Table 1. Literature Review Parameters (own illustration)*

| Parameter          | Details                                                                         |
|--------------------|---------------------------------------------------------------------------------|
| Databases          | EBSCO, SpringerLink, Google Scholar                                             |
| Search period      | 2014–2024, plus foundational works (pre-2014)                                   |
| Languages          | English, German                                                                 |
| Source types       | Journal articles, monographs, standards (ISO, GDPR), handbooks                  |
| Inclusion criteria | Empirical or conceptual relevance to educational context                        |
| Exclusion criteria | Technically oriented articles;<br>studies exclusively on commercial enterprises |
| Search enrichment  | Backward and forward citation searches                                          |

The theoretical basis combines Galbraith’s (1973) information processing theory, neo-institutionalist approaches (DiMaggio, Powell, 1983; Scott, Davis, 2006), concepts of organisational adaptability (Cohen, Levinthal, 1990; Teece et al., 1997) and information governance as defined by Smallwood (2014) and ISO/IEC 38500. The five components of the framework are derived from the regulatory logic of evidence (Art. 5(2) GDPR, ISO/IEC 38500), the structural design options of information processing theory and the core functions of business process management, and each address specific processing gaps described in the literature on compliance failures in educational institutions (vom Brocke, Rosemann, 2015; Dumas et al., 2018; Wilmers et al., 2021). The framework development followed a three-step procedure:

1. Systematic mapping of compliance gaps identified in the literature;
2. Theoretical grounding of each component in information processing theory, neo-institutionalism, and information governance;
3. Prescriptive specification of five interlocking components (Jaakkola, 2020).

The conceptual model is based on the distinction between descriptive and prescriptive models proposed by Jaakkola (2020). The present framework for process compliance is prescriptive: it demonstrates how information processes should be designed if compliance is to be a structural property rather than an additional activity.

## **RESULTS**

### **Information as an organisational resource under regulatory pressure**

In educational institutions, information is simultaneously an operational resource and a regulatory artefact. As a resource, it enables planning, coordination and service delivery; as evidence, it documents that an organisation has met its obligations toward external authorities. The two functions are not inherently at odds, yet they run on different logics. Governance architectures that collapse them into one risk carrying persistent structural tension and tend to underperform as a result (Krcmar, 2015; Davenport, 1993). Operational information management is organized around availability, whereas evidence-based management is organized around completeness and traceability. A governance design that holds both together is therefore not an optional feature, but a structural precondition for sustainable compliance management (Meyer, Rowan, 1977).

Galbraith's (1973) information processing theory makes this structural tension analytically legible. Organizations are confronted with an information processing capacity that, as environmental complexity and regulatory pressure increase, often falls short of actual processing needs. There is a gap between what compliance requires in terms of documentation and what an organization can actually achieve on a sustained basis in day-to-day operations, given its organizational capacity. This gap is particularly pronounced in small and medium-sized educational institutions. Their personnel resources and infrastructural conditions are often insufficient to accommodate additional compliance obligations alongside existing duties (Wilmers et al., 2021; Olt, 2020).

An additional perspective is provided by neo-institutionalism. According to DiMaggio and Powell (1983), organizations in the same regulatory field frequently develop comparable structures and patterns of action. The main driver of this homogenization is not demonstrated effectiveness, but the normative expectations that prevail within the respective organizational field. Compliance can thus be understood not primarily as a decision made by the organization, but rather as a condition of operation – and the central question is how regulatory requirements can be translated into process architecture without permanently tying up resources.

### **Information Governance: Concept and Architectural Logic**

Information governance is the overarching framework within which an organization defines roles, responsibilities, policies and controls for the management of its information assets (Smallwood, 2014). The ISO/IEC 38500 standard (International Organization for Standardization, 2024) defines governance in this sense as the system by which an organization aligns and monitors the use of IT against its principles.

According to Smallwood (2014), information governance operates at a meta-level: it does not directly control individual units of information but rather defines the framework within which information management operates. In doing so, information governance aligns all three areas of information management (information economics, information systems and ICT infrastructure) with regard to regulatory compliance (Krcmar, 2015). ISO/IEC 38500 stays at the level of principles and refrains from prescribing how processes should be designed. The GDPR sets legal obligations without specifying how organizations are to realize them internally in procedural terms. Both instruments, in short, define the “what” but leave the “how” at the process layer open. The Compliance-by-Process framework picks up precisely at this implementation gap, which IS and organizational design research has begun to treat as a design challenge in its own right (Hoess et al., 2024).

In conceptual terms, the framework extends existing approaches rather than replacing them. Unlike Privacy-by-Design (Cavoukian, 2009; Art. 25 GDPR), which embeds data protection into technical system design, the Compliance-by-Process framework generalizes this logic to the full regulatory spectrum at the level of organizational processes. Unlike COBIT 2019 (ISACA, 2018), which presupposes an IT department absent in most educational institutions, the framework is grounded in organizational theory and scalable for institutions with limited administrative capacity.

The need for such an implementation-focused governance architecture becomes particularly apparent under the GDPR: organizations must not only comply but continuously demonstrate compliance – a governance obligation that requires documentation architecture and defined responsibilities embedded in normal operations. Quality assurance frameworks (ISO 9001, ESG) and accreditation standards follow the same evidence-oriented logic: whether requirements are met through forward-looking process design or retrospective documentation largely determines their resource intensity.

### **The Compliance-by-Process Framework**

The Compliance-by-Process framework differs from additive compliance systems through a consistent principle of derivation. Each component is traceable to one of the three theoretical perspectives outlined above. The structuring reference is Galbraith’s (1973) distinction between demand reduction and capacity expansion; each component serves one or both of these strategies. The neo-institutionalist perspective explains why the framework relies on explicit role structures and accountability mechanisms – institutional pressure alone may not be sufficient to generate procedural internalization (DiMaggio, Powell, 1983; Sandholtz, 2012). Finally, information governance provides the architectural language in which regulatory requirements are translated into manageable structures (Smallwood, 2014). The following description of the five components is thus also an operationalization of these theoretical premises. As an original contribution of this paper, the framework was developed inductively from identified literature gaps and deductively grounded in the three theoretical perspectives outlined above.

### **1. Regulatory Needs Analysis**

The framework begins with a regulatory needs analysis. Before any requirement can be embedded into process design, it has to be captured, sorted, and weighted in a systematic way. The analysis charts the regulatory environment, including data protection, quality assurance, and accreditation, together with its points of contact with core processes. What emerges is a structured inventory that makes visible which processes fall under which obligations, as well as what is at stake if those obligations are ignored.

### **2. Creation of process profiles**

Building on this analysis, the second component involves the creation of process profiles with embedded compliance logic. A process profile is developed for each core process, linking the operational dimensions (purpose, inputs, outputs, roles, interfaces, systems and timeframes) with the compliance dimensions. The profile documents legal provisions, retention requirements and documentation obligations, fulfilling a dual function: operational reference and basis for demonstrating compliance

### **3. Role and responsibility structure with explicit accountability**

The third framework component defines a structure of roles and responsibilities with clearly assigned tasks and corresponding accountability mechanisms. This is an important component because compliance failures usually arise not from technical errors but from unclear responsibilities. The framework therefore stipulates that a defined role with binding responsibilities is assigned to every process and every compliance obligation. This principle corresponds to the established principle of process ownership from business process management (vom Brocke, Rosemann, 2015; Dumas et al., 2018).

### **4. Audit trail architecture**

The subsequent component is the audit trail architecture. Auditability calls for compliance evidence that is produced as a structural by-product of process execution, rather than being assembled in hindsight. Logging logic, version control, access records and documentation logs must be built into the process design. In digital environments, this is largely a matter of system configuration; in hybrid or analogue environments, it requires explicit procedural design. The guiding principle: the audit trail must be granular enough to trace who did what, when, and on what basis.

### **5. Monitoring and review cycle**

The process concludes with a monitoring and review cycle. Static process designs become non-compliant as soon as regulatory requirements change, structures shift and new systems are introduced. A structured review cycle assesses the regulatory needs analysis and the process profiles at defined intervals and whenever significant changes occur and is therefore an integral part of process governance.

The following table (Table 2) maps each component to its primary function and operational benefit.

*Table 2. Compliance-by-Process Framework: Components and Functions  
(own illustration)*

| <b>Component</b>                  | <b>Primary function</b>                                                      | <b>Operational benefits</b>                           |
|-----------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------|
| Regulatory needs analysis         | Mapping of compliance obligations to information processes                   | Structured inventory; basis for prioritization        |
| Process profiling                 | Documentation of operational and compliance-related aspects for each process | Dual-use reference document and compliance artefact   |
| Role and responsibility structure | Explicit assignment of responsibilities for each process and obligation      | Reduced ambiguity; defined escalation procedures      |
| Audit trail architecture          | Generation of structural evidence through process execution                  | Audit readiness as standard operating procedure       |
| Monitoring and review cycle       | Ongoing reassessment of compliance status                                    | Continuous compliance rather than ad hoc mobilization |

The overall architecture of the framework, including the iterative feedback loop between component 5 and component 1, is depicted in the following figure (Fig. 1).



*Figure 1. The Compliance-by-Process Framework (own illustration)*

### **Illustrative Application: Introduction of a New Training Program**

An educational institution launching a new course applies the framework sequentially across all five components. The regulatory needs analysis captures both the admission requirements laid down in the applicable educational legislation and the associated GDPR data processing obligations for applicant and learner records, producing a structured inventory that maps each requirement to the affected core processes.

Process profiling translates this inventory into the design of teaching, assessment and administrative workflows: retention periods, legal bases for data sharing and documentation obligations of instructors are defined as embedded process parameters, so that compliance arises as a structural by-product of normal operations.

The role and responsibility structure assigns explicit ownership for each compliance-relevant process step, with defined escalation paths for regulatory changes

mid-cycle. The audit trail architecture ensures that evidence required for accreditation reviews and data protection audits is generated continuously through process execution rather than assembled retrospectively.

Finally, the monitoring and review cycle specifies annual reviews and event-driven reassessments whenever applicable legislation or GDPR guidance is updated, feeding findings back into a revised regulatory inventory and keeping the compliance architecture current without requiring a separate mobilization effort.

### **Theoretical integration: information processing capacity and governance design**

Within Galbraith's framework, the individual components can be mapped to various organizational strategies. Process profiling and audit trail architecture complement one another by reducing compliance-related processing demands and thus minimizing the resulting workload. If documentation is integrated directly into process execution, compliance costs fall, consistent with the findings of process-integrated governance approaches. At the same time, responsibility is distributed across several organizational units, so that compliance is no longer tied to a single department and the institution's responsiveness to regulatory changes increases. Institutions with a structured information governance architecture therefore develop greater absorptive capacity (Cohen, Levinthal, 1990) and can translate regulatory shifts into process adjustments in a systematic way. Teece et al. (1997) supplement this with the notion of dynamic capabilities: adaptability is not the product of isolated moments, but of the capacity to reconfigure internal structures deliberately in response to environmental change. The framework's modular architecture is calibrated for exactly that capacity.

## **DISCUSSION**

The analysis suggests that compliance is primarily a matter of design and only secondarily a matter of documentation. „Compliance-by-Process” bridges these two aspects without pushing organisations into reactive measures – an advantage particularly relevant for small and medium-sized educational institutions, where scarce resources structurally intensify regulatory pressure (Freeman, 2010; DiMaggio, Powell, 1983).

The argument is not without controversy. Some in the field of organizational sociology remain sceptical as to whether approaches of this kind actually provide relief in environments characterized by significant regulatory heterogeneity. Brunsson (2002), for example, shows that organizations under strong institutional pressure often introduce governance structures on paper without truly embedding them in day-to-day operations – a pattern he describes as “organized hypocrisy”. Power (1997) takes a similar line and warns that audit architectures tend to generate legitimacy whilst the underlying information processes remain largely unaffected. The Compliance-by-Process framework responds to this critique not by simply dismissing it, but by structurally incorporating precisely those conditions, such as procedural embedding, assigned responsibility and iterative review whose absence

gives rise to organised hypocrisy and audit formalism. Whether these conditions prove sufficient to prevent decoupling remains an empirical question for future research. This susceptibility may be compounded by the loose coupling characteristic of educational organizations (Weick, 1976), which renders them structurally prone to decoupling formal compliance from operational practice.

The application of the framework to a concrete institutional context – the introduction of a new training program – is discussed as an illustrative use case in the Results section above.

The limitations of the framework must be clearly defined. Resource constraints are not eliminated but redistributed. The effort required to comply with regulations is no longer concentrated on audit cycles, but shifts to the initial design of the processes. A reduction of preparatory effort and error rates only becomes apparent in the medium term. Whether such a reallocation is practicable depends on the institutional capacity of the respective organisation. The framework is therefore primarily suitable for institutions that are simultaneously subject to several regulatory regimes, such as universities and educational training institutions. Its modular layout allows less well-resourced institutions to start with the needs analysis and the role structure and to build out the full process profiles incrementally. Empirically grounded implementation experience is still missing; case-study research in educational training institutions would be well placed to close that gap.

## CONCLUSION

The Compliance-by-Process framework proposed here offers a transferable structural basis, one in which regulatory requirements are carried over into design specifications through five interlocking components: regulatory needs analysis, process profiling, role and responsibility structure, audit trail architecture, and a monitoring and review cycle.

The theoretical case against reactive compliance is not merely normative: Galbraith's capacity model, neo-institutionalist decoupling theory and the concept of dynamic capabilities all converge on the same structural diagnosis: organizations that treat compliance as a downstream task tend to under-invest in the governance architecture that would make it sustainable. The tension between regulatory information requirements and organizational processing capacities is unlikely to be sustainably resolved through retrospective compliance measures alone. Once governance is anchored structurally, compliance loses its character as an externally imposed load and turns into something else, namely a readable, verifiable property of the organization itself.

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## УПРАВЛЕНИЕТО НА ИНФОРМАЦИЯТА КАТО АРХИТЕКТУРА ЗА СЪОТВЕТСТВИЕ И ДОКАЗАТЕЛСТВА НА ИНФОРМАЦИОННИТЕ ПРОЦЕСИ В ОБРАЗОВАТЕЛНИТЕ ИНСТИТУЦИИ

**Резюме:** В образователните институции спазването на нормативните изисквания често се разглежда като задача по документиране, изпълнявана ретроспективно в навечерието на одити, вместо да бъде вградена в организационните информационни процеси от самото начало. Настоящата статия предполага, че такъв подход може да бъде структурно ограничен, тъй като спазването на нормативните изисквания вероятно ще остане реактивно, ресурсоемко и потенциално уязвимо, ако задълженията по управлението не бъдат по-систематично интегрирани в проектирането на процесите. Въз основа на интегративен преглед на литературата и концептуално моделиране статията преосмисля информационното управление като проактивна архитектура за съответствие и доказателства, която структурира регулаторните задължения директно в дизайна на институционалните процеси. Опирайки се на теорията за обработката на информация, информационното управление и организационната теория, тя разработва рамка за „Съответствие чрез процеси“, която превръща многостепенните регулаторни изисквания в логика на процесите, структури на ролите и процедури за документиране, позволявайки на образователните институции да интегрират регулаторните изисквания в своята информационна архитектура по начин, готов за одит и преносим.

**Ключови думи:** управление на информацията; архитектура за осигуряване на съответствие; информационни процеси; образователни институции; нормативни изисквания

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