

Keeping Pace with Digital Reality: The Application of a Holistic DMM in the Media Industry

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Abstract

The digital transformation of the media industry has led to significant changes in business models, processes, and strategies. This study presents a comprehensive Digital Maturity Model (DMM) specifically designed for content publishers, aimed at assessing and improving digital maturity. By leveraging existing IT and digital maturity models, expert interviews, and case studies from German media organizations, the model pinpoints essential dimensions that impact digital transformation. The findings reveal notable differences between digital and traditional business models and highlight key areas for improvement, such as IT usability. The DMM offers practical insights to enhance competitiveness and promote organizational learning.

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1. The Digital Transformation of the Media Industry: How Do We Measure It?

Today, most academics and practitioners agree that firms of all sizes and across sectors must prioritize digital transformation to remain competitive in an ever-changing business environment (Kyrdoda et al., 2025). Digital transformation encompasses measures through which a firm fundamentally transforms its business strategies, processes, capabilities, products, services, and interorganizational relationships using digital technologies (Bharadwaj et al., 2013). The media industry can be regarded as a seismograph of these disruptive developments and, as one of the pioneering industries in digitalization, has experienced dramatic transformations (Piepponen et al., 2022). In particular, the advancement of information technologies has significantly altered audience behavior, presenting content publishers with substantial challenges in fulfilling their traditional role of creating, aggregating, and distributing professionally generated content (Hess et al., 2016).

To navigate this dynamic environment, managers across industries seek structured guidance. In this context, executives frequently rely on so-called Digital Maturity Models (DMMs) to assess their organization's digital status and derive improvement measures. Digital maturity refers to "the status of a company's digital transformation" and reflects both implemented operational changes and acquired capabilities for managing transformation processes.

However, existing DMMs – although available for various industries – often fail to provide a comprehensive roadmap toward digital maturity. Many models neglect critical elements of organizational IT, such as governance policies, standardized processes, and IT-specific performance indicators, despite their direct impact on day-to-day operations. For example, an organization may score highly on a DMM by having adopted cloud infrastructure or AI-driven workflows, yet still struggle with low software adoption rates among employees, poorly defined IT governance structures, or the absence of measurable KPIs linking digital investments to business outcomes. These gaps are not theoretical: a media company rolling out a new content management system without standardized onboarding processes or clearly defined usage metrics may see the tool underutilized or abandoned within months.

As a result, organizations applying incomplete or insufficiently contextualized DMMs risk misallocating resources, overlooking structural weaknesses, or failing to realize the full benefits of digital transformation. A publishing house investing heavily in data analytics capabilities, for instance, may lack the internal process maturity to act on the insights generated, rendering the investment largely ineffective. Thus, there is a clear need to integrate key elements of IT maturity models into DMMs in order to achieve a comprehensive assessment framework.

While assessing the current state is a necessary starting point, sustainable digital transformation also requires the definition of a desired future state and a feasible roadmap for moving from one to the other. For managers, a maturity assessment creates value only if identified capability gaps can be translated into prioritized transformation measures and concrete investment decisions. This is particularly relevant in media markets, where the consequences of incomplete transformation are visible and well-documented: Vice Media's bankruptcy illustrates that an early digital presence and high content output alone do not guarantee a sustainable path if underlying operational and organizational structures are not matured accordingly.

Against this background, this study pursues two objectives: first, to derive and justify a structured design approach for a holistic DMM tailored to medium and large content publishers in the media industry; and second, to demonstrate how such a model can be operationalized, interpreted, and applied by practitioners to assess digital maturity and inform managerial decision-making.

Taken together, these objectives give rise to the following research question: ***How can a holistic Digital Maturity Model for medium and large content publishers be systematically developed and meaningfully applied in practice?***

In this study, we develop and validate a holistic Digital Maturity Model tailored to medium and large content publishers in the media industry following established Design Science Research principles (Hevner et al., 2004). By integrating dimensions from both IT maturity models and existing DMMs – including IT governance, process change management, requirements management, and IT usability – the model addresses a structural gap in the literature and offers a more comprehensive assessment framework than previously available approaches. Its application across four organizations revealed that digital maturity levels closely correspond to underlying business models, and that even digitally advanced publishers exhibit notable weaknesses in IT usability – demonstrating that technological sophistication alone does not guarantee organizational readiness for transformation. For practitioners, the model offers a structured, repeatable instrument for diagnosing capability gaps, prioritizing investments, and building management commitment. In an industry where the consequences of incomplete digital transformation are increasingly visible, having a reliable and actionable orientation framework is not an academic exercise, but a strategic necessity.

2. Digital Transformation and Digital Maturity in the Content-Publishing Media Industry

With the advent of new technologies such as the Internet and the digitization of content, content publishers are confronted with the necessity of transforming into fully digital media organizations. For practitioners, this transformation is no longer optional but a strategic imperative driven by shifting customer expectations, new competitors, and declining print revenues. In Germany, for example, the so-called “Zeitungssterben” (decline of print newspapers) has led to significant market consolidation among publishers.

Traditionally, publishers have fulfilled the central role of creating, aggregating, and distributing professionally generated content. However, as demand for online media increases, generating sustainable revenues has become significantly more challenging. Direct income models include subscriptions, usage-based fees, licensing, and content syndication. Indirect revenue streams comprise advertising and affiliate marketing, where third parties pay for access to audiences. In practice, many publishers are therefore experimenting with hybrid monetization models and expanding into non-content-related products and services to diversify revenue streams.

The advancement of digital technologies affects not only business models but also organizational structures, leadership approaches, internal processes, and corporate culture. For media executives, digital transformation thus represents an organization-wide change program rather than a purely technological initiative. To remain competitive, organizations must align their business models, structures, processes, culture, and technological capabilities. A lack of alignment between these elements is one of the most frequently observed barriers in digital transformation initiatives.

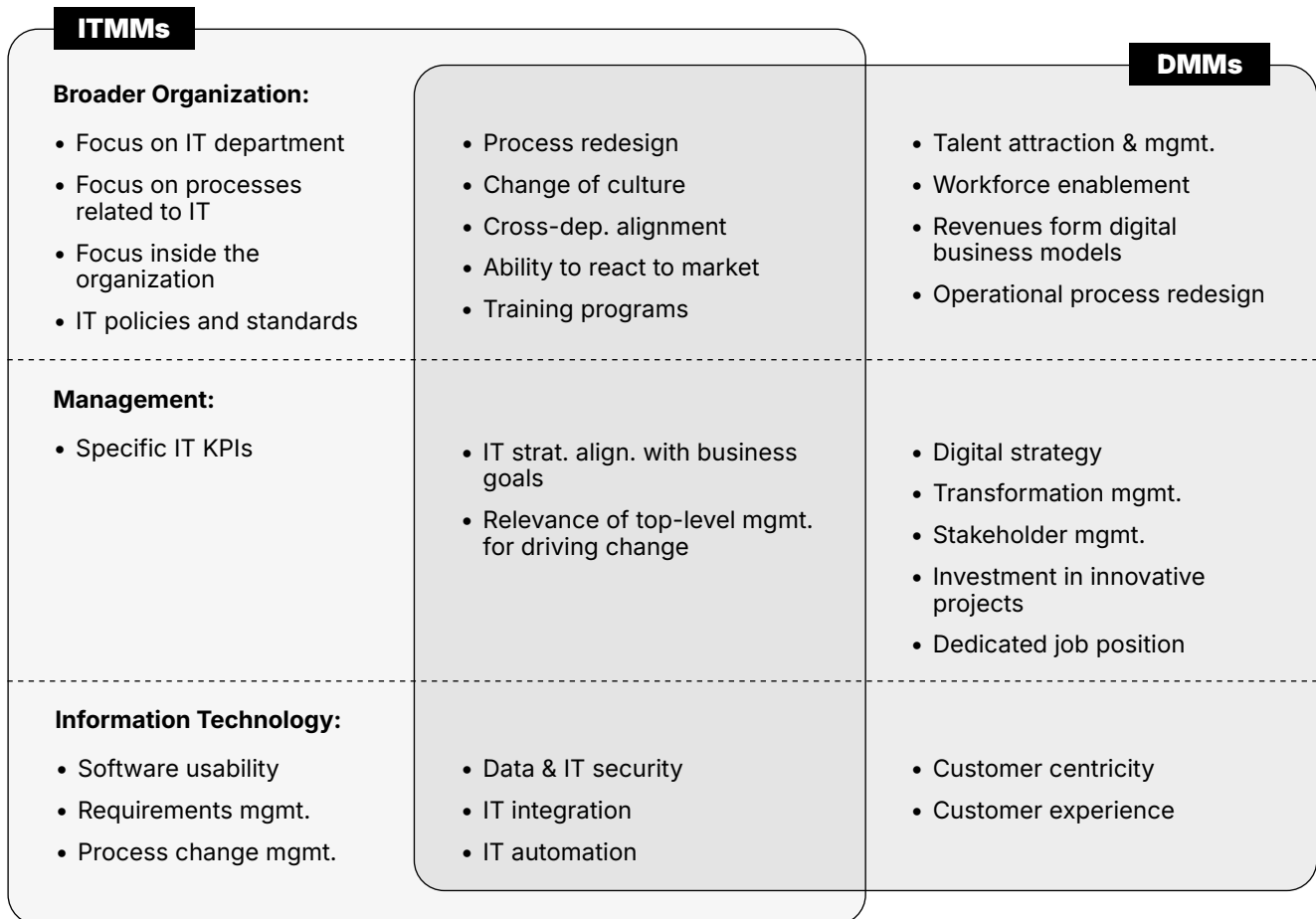


Figure 1. Overlap between ITMMs and DMMs

The concept of “maturity” refers to an organization’s ability to respond appropriately and systematically to its environment through structured management practices. In managerial terms, higher maturity reflects greater transparency, consistency, and effectiveness in how digital initiatives are planned, implemented, and governed.

Maturity models describe development paths through clearly defined stages, ranging from an initial state to a desired target state (Becker et al., 2009). They provide structured guidance by defining characteristic capabilities and benchmarks for each stage. For practitioners, maturity models serve three key purposes:

- (1) Assessment of the current status (Where do we stand?)
- (2) Definition of a target state (Where do we want to go?)
- (3) Prioritization of transformation initiatives (What should we tackle first?)

Digital Maturity Models (DMMs) assess an organization’s overall readiness and capability to manage digital transformation across multiple dimensions (Schallmo et al., 2020). In contrast, IT maturity models focus specifically on the performance and governance of the IT function. While IT maturity concentrates on the technological backbone of the organization, digital maturity encompasses strategy, leadership, culture, processes, customer interaction, and business models.

O	Not Started	Organization has not taken any steps to transform	a. Strategy
I	Initiating	Move toward digital business and taking of initial steps	b. Organization
II	Enabling	Implementation of initiatives to form the foundation of digital business	c. Customer
III	Integrating	Integration of initiatives to support end-to-end capabilities	d. Ecosystem
IV	Optimizing	Digital initiatives are fine-tuned to increase overall performance	e. Operations
V	Pioneering	Organization is breaking new ground and advancing along dimensions	f. Technology g. Innovation

Figure 2. Exemplary Digital Maturity Model (adapted from Valdez-de-Leon, 2016)

For media organizations, this distinction is particularly relevant: strong IT capabilities alone do not ensure digital competitiveness if strategic alignment, cross-functional collaboration, and digital business innovation are lacking. At the same time, IT remains a critical enabler of digital transformation. Consequently, a comprehensive Digital Maturity Model for the media industry must integrate both perspectives.

Figure 1 illustrates the overlap and distinctions between IT maturity models (ITMMs) and digital maturity models along three core pillars of information systems: organization, management, and information technology. This integrated view provides practitioners with a holistic lens through which digital transformation efforts can be systematically evaluated.

It is beneficial to develop a holistic Digital Maturity Model tailored to the specific characteristics of content-publishing organizations. Such a model should not merely describe theoretical stages but offer actionable orientation for decision-makers; and it should combine central elements of IT maturity models and Digital Maturity Models to establish a more comprehensive and integrated assessment framework.

All Digital Maturity Models assess an organization's digital transformation status based on predefined dimensions and consecutive maturity levels. Although models differ in their architecture (e.g., number of stages and dimensions), they share a multidimensional structure and a staged development logic. For practical application, clarity, measurability, and relevance of dimensions are more important than conceptual complexity. Digital Maturity Models are typically designed for medium-sized and large organizations with formal structures and defined responsibilities. This makes them particularly suitable for established publishing houses undergoing structured transformation programs.

Figure 2 illustrates an exemplary Digital Maturity Model developed for telecommunication service providers (Valdez-de-Leon, 2016). It presents a Digital Maturity Model that clearly illustrates the typical architecture of such frameworks, structured along evolutionary maturity stages and multiple organizational dimensions. The model systematically defines each stage by outlining characteristic capabilities and specifying the key challenges that must be addressed in order to progress to higher levels of maturity. Due to its conceptual transparency and explicit stage descriptions, it has been widely cited in both academic and practitioner-oriented contexts, distinguishing it from other models that often lack methodological clarity or detailed operationalization. Figure 2 is used as an illustrative example.

On the left-hand side, five evolutionary stages are presented, each characterized by typical organizational capabilities. On the right-hand side, seven dimensions are defined along which digital maturity is assessed.

The model includes a default level 0, representing a state of digital inactivity. The first maturity stage reflects initial digital initiatives. The next stage is characterized by the implementation of structured initiatives across relevant dimensions. Subsequently, these initiatives become integrated and aligned to enable end-to-end digital capabilities. Further optimization enhances performance and efficiency. At the highest level, the organization systematically innovates and shapes best practices within its industry.

For practitioners, the staged logic offers a roadmap: organizations do not leap directly to full digital maturity but progress through manageable development phases. Each stage requires different managerial priorities, governance mechanisms, and investment decisions.

Building on these principles, the following sections derive a Digital Maturity Model specifically tailored to the media industry, designed to provide concrete guidance for transformation leaders in publishing organizations.

3. Proposal for a Holistic DMM for Content Publishers in the Media Industry

The model presented here was developed in accordance with established standards. Detailed information on the individual development steps is provided in the appendix.

The evolutionary path to digital maturity depicted on the left of Figure 3 is set out as follows. Level 0: Initiation, characterized by an existing basic IT setup. Level I: Enabling. Having profited from the benefits generated by IT (efficiency and cost reductions), a need for further IT growth throughout the entire organization develops. User training becomes necessary, and due to this rapid expansion, failures and costs increase exponentially. Level II: Regulation. As a result, top management promotes IT integration and imposes controls to restrict costs, now aligning IT with business goals to further exploit IT benefits. At this point, the organization possesses a sophisticated IT infrastructure. Level III: Digital Business Model. Aiming at achieving digital maturity, the organization now designs a digital strategy and implements a digital business model. Level IV: Customer Centricity. Customer focus intensifies, and data is systematically collected and exploited with the goal of enhancing the customer experience and thus the organization's competitiveness. Level V: Optimization. To take the final step toward maturity, and to maintain it, the organization needs to reflect continuously on all sub-dimensions and challenge its position in the market. The maturity stages shown on the left-hand side of the model should not be interpreted as a linear checklist of isolated technologies. Rather, progression from one stage to the next reflects the increasing maturity with which digital technologies are selected, governed, integrated, and embedded in organizational capabilities. Thus, in the earlier stages, technology use is typically fragmented, locally driven, and only loosely connected to business objectives. As organizations progress, technology-related decisions become more structured through clearer governance, stronger management support, improved requirements management, and more systematic integration into operational processes. At higher maturity stages, digital technologies are no longer adopted in an ad hoc manner but are aligned with the digital business model, customer-facing objectives, and continuous organizational optimization. In this sense, the model captures not merely the presence of specific technologies, but the organizational capability to select and drive its effective adoption.

O	Initiation	Basic IT to support daily business	1. Organization a. Culture and Expertise b. Collaboration c. Operational Processes d. Business Model e. Customer Experience	2. Management a. Performance Measurement b. Designated Roles and Positions c. Digital Strategy d. Management Support e. Product Innovation	3. Information Technology a. Software Usability b. IT Automation, Integration and Security c. Requirements Management d. Technology Change Management e. Process Change Management
I	Enabling	IT growth throughout the entire organization; training of employees			
II	Regulation	IT initiatives integrated; strategic alignment of IT with business goals			
III	Digital Business Model	Digital strategy; digital business model implementation			
IV	Customer Centricity	Customer experience as source of competitiveness use of new technologies			
V	Optimization	Continuously reflect on and challenge all dimensions			

Figure 3. Generalist DMM (design inspired by Becker et al., 2009)

Each of the stages only addresses one evolutionary step on the path to digital maturity, albeit the entire organization is affected by this transformation. In this context, at any point, all dimensions need to be taken into consideration.

At this stage, the DMM is created via an iterative approach that is purely conceptual in nature. To reap the model's benefits fully, it needs to be made applicable. For this purpose, we developed an item assessment catalogue: a structured set of statements, each mapped to a specific DMM dimension, designed to operationalize the model and enable systematic self-assessment within an organization. Table 1 illustrates five exemplary statements from this catalogue; the final version comprises 54 statements covering all dimensions of the model, which can be found in the appendix (Table 6).

To generate an overall digital maturity level, each of the statements in the catalogue needs to be quantified via a five-point Likert scale. For each participating organization, three internal respondents were selected across hierarchical levels (executive, middle management, and operational), each closely involved in digital strategy implementation. In structured individual interviews guided by two members of the research team, each respondent independently rated the catalogue statements in relation to their organization's present setting, with a score of five indicating full agreement with a given statement.

4. Application of the DMM in Five Case Studies

The content publishing media industry in Germany is an ideal example of the ongoing, fast-paced digital transformation of today's business environment. It represents a particularly informative setting

Dimension	Item
Software Usability	1. On a scale of 1–5: How important is usability and intuitive application when purchasing/developing software for internal use? 2. Every employee is provided with short-term, fully functional IT support.
Management Support	1. Leading bodies in the company are driving digital transformation forward and making the appropriate resources available. 2. Control and responsibility for digital transformation lies at top management level. 3. Middle management drives the implementation of digital projects.

Table 1. Five Exemplary Measurement Items for Digital Transformation

for examining digital maturity because it combines a historically strong print tradition with pronounced digital transformation pressure. Publishers in Germany are simultaneously confronted with declining print circulation, growing digital subscription and e-paper businesses, rising consolidation pressure, and increasing dependence on platform-generated traffic. Industry reports describe the sector as entering a “critical phase” in which publishers must manage the transition from legacy print economics to scalable digital revenue models. This makes the German market especially suitable for studying how content publishers balance established organizational structures with the requirements of digital renewal. In the context of a pilot study, we tested our DMM in a medium-sized German content publishing media organization dealing with the digital distribution of music, radio plays, video games, applications, and films, as well as creating additional digital business sectors and the sale of licensing rights (national/international).

After the pilot, we applied the adapted model to four large organizations within the same industry, all of which are part of the same multi-billion Euro media corporation, which is considered one of the leading organizations in digitally transforming the sector in Germany (Table 2). Three of the four organizations rely on a digital business model based on digital content syndication and advertising and affiliate marketing, whereas the other one generates revenue through a traditional business model focused on print content syndication with usage-related fees. Despite having the same parent company, all four organizations are separate entities; however, the organizational structure, context, and culture of these firms display significant similarities. To enhance the rigor of the DMM application, we used a triangulated interview design across the four focal subsidiaries. For each subsidiary, three interview partners were selected who were closely connected to the implementation of digital strategy: one executive-level respondent, one middle-management respondent, and one respondent from the operational level. This resulted in a total of 12 interviewees across the four case organizations. To understand each company’s transformation process, the case study did not focus solely on whether particular technologies were in use, but also on how technology-related decisions were made and implemented. The triangulated interview design enabled us to capture these mechanisms across hierarchical levels. Executive respondents provided information on strategic priorities. Middle-management respondents described how technology-related initiatives were embedded into projects and coordination mechanisms, and operational respondents contributed insights into day-to-day usability and added value. This multi-level perspective was complemented by the item assessment catalogue and additional organizational

Case Study Organization	Number of Employees	2019 Revenue	Industry
Pilot Organization	50 to 100 employees	€50m to €100m	Media
Digital Content Publisher 1 (DCP 1)	400 to 800 employees	€100m to €150m	Media
Digital Content Publisher 2 (DCP 2)	400 to 800 employees	€100m to €150m	Media
Digital Content Publisher 3 (DCP 3)	400 to 800 employees	€100m to €150m	Media
Print Content Publisher 1 (PCP 1)	400 to 800 employees	€100m to €150m	Media

Table 2. DMM Application Sample

	Total Score (out of 5)	Maturity Level
Digital Content Publisher 1	4.1	IV
Digital Content Publisher 2	4.1	IV
Digital Content Publisher 3	4.0	IV
Print Content Publisher 1	2.7	II

Table 3. Digital Maturity Level and Pillar Scores for DCPs 1–3 and PCP 1

materials, allowing us to assess not only the existence of digital technologies, but more importantly the organizational conditions under which they were selected and adopted. The interviews were conducted in a structured format and included completion of the item assessment catalogue, individual weighting of DMM dimensions, and qualitative explanations of the responses given.

4.1 Overall Digital Maturity Level

Table 3 illustrates the attained overall pillar scores and maturity levels of the evaluated organizations. The final maturity scores are calculated based on the compound results of the assessment catalogue, whilst the digital maturity level is derived from the maturity score and displays the current evolutionary stage of the organization in terms of its digital transformation. DCPs 1–3 attained a maturity score equal to or greater than 4, thereby indicating that these organizations are currently in the IV Customer Centricity phase, i.e., customer experience as a source of competitiveness, and the use of new technologies. On the other hand, PCP 1 is located on the second digital maturity level II Regulation, e.g., integrated IT initiatives and the strategic alignment of IT with business goals. Further details regarding the composition of the scores can be obtained through consideration of our DMM (Figure 5). In the following, we compartmentalize the overall maturity scores of the organizations into central pillar scores (Table 4).

	DCP 1	DCP 2	DCP 3	PCP 1
Broader Organization	4.2	4.2	4.2	2.8
Management	4.3	4.2	4.2	2.2
IT	3.8	3.9	3.6	3.1

Table 4. Pillar Scores for DCPs 1-3 and PCP 1

Dimension	Subdimension	DCP 1	DCP 2	DCP 3	PCP 1
Broader Organization	Business Model	4.0	4.1	4.0	1.9
	Collaboration	5.0	5.0	5.0	4.8
	Culture & Expertise	4.1	4.4	4.0	2.4
	Customer Experience	4.6	4.0	4.7	2.1
	Operational Processes	3.4	3.5	3.2	3.0
Management	Designated Roles	3.5	3.4	3.5	1.5
	Digital Strategy	4.3	3.8	3.7	1.4
	Management Support	4.6	4.6	4.5	2.5
	Performance Measurement	5.0	5.0	5.0	3.0
	Product Innovation	3.9	4.0	4.1	2.5
IT	Requirements Management	4.2	4.1	3.6	4.0
	Process Change Management	3.9	4.0	4.0	3.0
	Technology Change Management	2.9	3.1	2.8	1.0
	IT Usability	4.2	4.5	3.6	4.5
	IT Automation, Integration, and Security	4.0	4.0	3.9	3.0

Table 5. Dimension Scores for DCPs 1-3 and PCP 1

4.2 Pillar Scores

The three central pillars of our DMM are (I) broader organization, (II) management, and (III) information technology. Thus, for each organization, three pillar scores were calculated. DCPs 1–3 consistently achieved a score of 4.2 regarding the broader organization pillar, whereas PCP 1 scored 2.8. For the management pillar, DCPs 1–3 once again showed very low variance around their average score of 4.25. PCP 1 attained a score of 2.2. For the information technology pillar, the DCPs 1–3 scores ranged between 3.6 and 3.9. Here, PCP 1 scored 3.1. As a next step, we also broke down the three pillar scores further into 15 dimension scores for each organization (Table 5).

4.3 Dimension Scores

Analogical to the pillar scores, it is apparent that DCPs 1–3 have very similar scores for a broad range of dimensions. The high score was attained by DCPs 1–3 in the Collaboration and Performance Measurement dimensions, while the lowest scores were attributed to Technology Change Management and Operational Processes. The highest variance within the DCPs 1–3 scores was found in the IT Usability dimension.

In tandem with the pillar scores, the PCP 1 scores were typically lower than the DCP scores. PCP 1 scored highest in the Collaboration dimension, whilst the lowest score was achieved for Technology Change Management. The abovementioned scores enable the identification of potential areas of improvement in the organization's digital transformation endeavors.

4.4 Measures to Exploit Digital Transformation Potential

Areas with the lowest dimension scores achieved in the digital maturity assessment offer the highest potential for enhancing the organization's overall digital status quo. Exemplarily, DCPs 1–3 could improve their scores for Technology Change Management and Operational Processes through a set of concrete practical measures, derived from the item assessment catalogue.

Technology Change Management refers to the continuous proactive identification of new technologies, their evaluation regarding potential benefits for the business, and, ultimately, if beneficial, their integration into the organization through a set of standards. The results of the assessment catalogue indicate that for DCPs 1–3 to increase their overall digital maturity level, they should focus more intensely on identifying new and more beneficial technologies and establishing standards regarding the evaluation and integration of these technologies. Operational Processes refers to the efficiency, adaptability, and continuous re-evaluation of processes that are directly related to the production of a service or product. The results of the item assessment catalogue indicate that DCPs 1–3 should engage in mapping operational processes and perform business process re-engineering to increase efficiencies.

To validate the results with the participating organizations, the maturity scores and derived practical measures were presented to the organizations in a dedicated results session. This session involved the CTO of the parent corporation and one chief executive from each of the participating subsidiaries and served the purpose of comment and verification. While these measures were presented and discussed with organizational representatives, the present study did not systematically track their implementation over time. All managers appreciated the detailed level of the assessment and the derivation of concrete improvement measures. They stated that they were satisfied by the current level of digital maturity of their organizations and that the results were highly comprehensible.

5. Summary and Lessons Learned from the Holistic DMM Application

The validation of the DMM demonstrates that the model's assessment results align with public consensus, affirming the status of the organizations assessed as pioneers in digital transformation. This lends confidence in the model's validity and its ability to meaningfully differentiate between varying levels of digital maturity. The stark contrast between Print Content Publisher 1 and its digital counterparts (Digital Content Publishers 1–3) illustrates how fundamentally business model orientation shapes an organization's maturity profile, not merely in technology adoption, but across governance, process standardization, and strategic alignment.

Notably, even the most digitally advanced publishers in our sample scored lowest in IT usability, a finding that carries direct practical relevance. High investment in digital infrastructure does not automatically translate into usable, well-adopted systems. For practitioners, this suggests that technology rollouts should be accompanied by structured usability assessments, employee feedback loops, and iterative improvement cycles, rather than treated as one-time implementation projects.

5.1 Actionable Recommendations for Practitioners

Based on the assessment results, we have derived several concrete recommendations for managers and decision-makers in the media industry:

Prioritize process maturity alongside technology investment. Organizations frequently invest in new tools – analytics platforms, content management systems, or automation software – without adequately maturing the underlying processes required to use them effectively. Publishers should assess process readiness before, not after, committing to major technology investments. Requirements management and process change management, two dimensions in which several publishers showed room for improvement, are particularly critical enablers of successful digital transformation.

Use maturity gaps as a basis for investment prioritization. Rather than pursuing broad digital initiatives, the DMM enables organizations to pinpoint specific capability gaps and translate them into prioritized investment decisions. A publisher scoring low on IT governance, for instance, should address structural deficiencies before expanding its technology stack, as additional tools layered onto immature governance structures tend to increase complexity without delivering proportional value.

Treat the DMM assessment as a recurring management instrument, not a one-time audit. Digital maturity is not a static state. Media markets evolve rapidly, and what constitutes mature practice today may become table stakes within two to three years. Publishers should embed maturity assessments into their regular strategic planning cycles to track progress, adjust priorities, and maintain organizational alignment around transformation goals.

Leverage assessment results to build executive commitment. In our application of the model, the structured assessment process itself proved valuable beyond its diagnostic output: it prompted critical reflection among executives about their organization's digital status and fostered more informed, evidence-based discussions about transformation priorities. Practitioners should use this deliberative function intentionally, for example, by involving cross-functional leadership teams in the assessment process to build shared understanding and accountability.

5.2 Implementation Challenges

Despite its practical utility, implementing the DMM and acting on its results is not without friction. Several challenges are likely to arise in practice:

Resistance to transparency. Maturity assessments make organizational weaknesses visible and comparable, which can trigger defensive reactions, particularly in organizations with siloed structures or hierarchical cultures. Publishers should anticipate resistance and invest in change communication that frames the assessment as a development tool rather than a performance evaluation.

Data availability and self-assessment bias. The reliability of DMM results depends heavily on the quality and honesty of input data. Self-assessments are susceptible to social desirability bias, where respondents overstate maturity in areas perceived as strategically important. Triangulating self-reported scores with operational data – such as system adoption rates, process cycle times, or IT incident metrics – can help mitigate this risk, but requires a degree of data infrastructure maturity that many publishers may not yet have.

Translating scores into action. A frequent pitfall in maturity assessments is the gap between diagnosis and implementation. Identifying a low score in, say, requirements management is only valuable if the organization has the capacity and mandate to act on it. Without dedicated ownership, allocated resources, and defined timelines, maturity assessments risk becoming shelf documents. Practitioners should therefore couple any DMM application with a structured follow-up process that assigns accountability for improvement initiatives at the leadership level.

Context sensitivity. While the DMM was developed for medium and large content publishers, significant heterogeneity exists within this segment: between public and private broadcasters, between legacy print and digitally native organizations, and across different national regulatory environments. Practitioners should treat the model as a structured starting point that may require contextual adaptation rather than a universally prescriptive framework.

6. Limitations and Outlook

Several limitations of this study must be acknowledged. The findings are not statistically generalizable, as the model was piloted and applied in four content-publishing organizations belonging to the same parent corporation and operating within a comparable European context. While the model demonstrated applicability and face validity within these cases, broader generalizability remains subject to further empirical validation. Additionally, the DMM captures digital maturity at a single point in time and does not account for the long-term effects of implemented transformation initiatives.

Future research should apply the DMM across a broader range of organizational and geographical contexts, particularly in media markets with different structural conditions, such as digitally native publishers, public broadcasters, or organizations operating outside of Europe. Longitudinal applications would further allow researchers to assess not only maturity levels at a given point in time, but also the extent to which specific interventions contribute to sustained transformation outcomes over time. As digital technologies and business models continue to evolve rapidly, the DMM itself should be understood as a living framework requiring periodic reassessment and refinement. Ultimately, digital transformation in the media industry is not a destination but an ongoing process of organizational

adaptation, one that demands both structural rigor and strategic flexibility. The DMM proposed in this study aims to support organizations in navigating this process more deliberately, by making the invisible visible and turning complexity into actionable orientation.

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Appendix: Detailed Procedure for Model Development

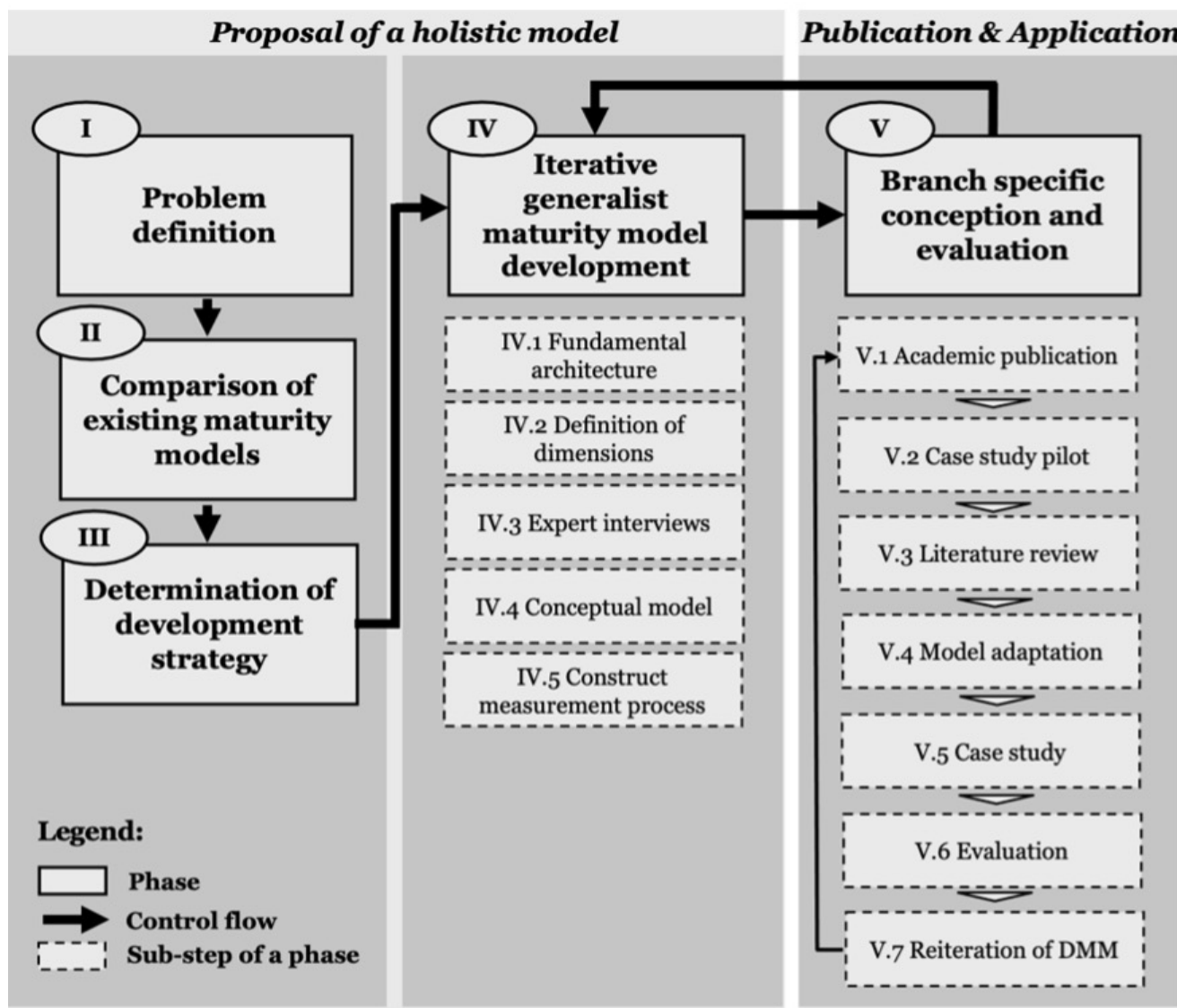


Figure 4. Procedural Model (based on Becker et al., 2009; Bruin et al., 2005)

The procedure in Figure 4 provides a framework for developing a branch-specific DMM for content publishers in the media industry. Phases I to V allow the development of a generalist DMM grounded on extensive literature, existing models, and first empirical insights. In a sixth phase, the general model will be refined into an industry-specific model.

Design Phases I, II, & III

As a result of our initial definition of the research aims, a literature review, and an analysis of ITMMs and DMMs (Figure 1), the first two phases of the modeling process have been completed. The purpose was to derive recurring maturity-stage logics; identify relevant organizational, managerial, and IT-related dimensions; and detect shortcomings in existing models. As a part of the development strategy (phase III), we identified five requirements that such a model should meet (Becker et al., 2009):

Dimensions	Central Concepts	Reference Models (e.g.)
Broader Organization		
Culture & Expertise	Culture of mistakes and propagation of digital competencies	Berghaus et al. (2016), Gill and Van Boskirk (2016)
Collaboration	Provide flexible working models and opportunities for collaboration	Berghaus et al. (2016), Catlin et al. (2015)
Operational Processes	Process efficiency, Process agility, adaptability, continuous reevaluation	Westerman et al. (2012), Colli et al. (2018)
Business Model	Product/Service augmentation, Transitioning physical to digital, new digital business	Westerman et al. (2012), Lichtblau et al. (2015)
Customer Experience	Customer Understanding, Customer touch points, digitally enhanced selling	Westerman et al. (2012)/Berghaus et al. (2016)
Management		
Digital Strategy	Strategic alignment with digital challenges and systematic prioritization of digital projects	Berghaus et al. (2016), Catlin et al. (2015)
Designated Roles and Positions	Designated position/roles in charge of steering the transformation, clearly defined	Berghaus et al. (2016)
Performance Measurement	Targets are defined, measurable and transparent, continuously monitored	Berghaus et al. (2016)
Management Support	Top management drives digital projects forward	Berghaus et al. (2016)
Product Innovation	Improving processes with regards to the product	Westerman et al. (2012)/Berghaus et al. (2016)
Information Technology		
IT Usability	Provide internal users with services that are intuitive and easy to use, functional support	Nolan (1992)
IT Automation, Integration & Security	Degree of IT automation, integration, security	Nolan (1992)/Westerman et al. (2012)/Berghaus et al. (2016)
Requirements Management	Common understanding of requirements that need to be addressed by IT, basis for planning	Paulk et al. (1993)
Technology Change Management	Identifying beneficial new technologies and transfer them into the organization	Paulk et al. (1993), Catlin et al. (2015)
Process Change Management	Continually improve the software processes quality, productivity, decreasing cycle time	Paulk et al. (1993)

 Refined after Interviews
  Has not yet been covered by DMMs

Figure 5. Generalist DMM Dimensions

- (1) Offer a structured view of the digital transformation journey, from the cradle to maturity.
- (2) Be comprehensive enough to cover all relevant aspects of digital transformation for content publishers in the media industry.
- (3) Be specific enough to enable purposeful actions and investments.
- (4) Be applicable.
- (5) Ensure that the development strategy aims at incorporating ITMMs and DMMs into a new holistic framework. Together, phases I and II provide a first blueprint for this endeavor.

Phase IV: Iterative Generalist Digital Maturity Model Development

The fourth phase was divided into five sub-phases (Figure 4). The review of IT maturity models and digital maturity models shows that both streams address important but only partially overlapping aspects of organizational transformation. While DMMs typically place greater emphasis on strategy, leadership, customer orientation, and business model change, ITMMs provide more detailed guidance on IT-related structures, processes, and governance mechanisms. This observation directly informed the development of our holistic framework.

In order to organize and manage the pillars, these dimensions were taken from DMMs (c.f. e.g., Westerman et al., 2012; Catlin et al., 2015). Then, we undertook seven semi-structured interviews with German digitalization specialists to assess the model's plausibility and practical use (Becker et al., 2009). Each of the experts had previously implemented management tools to aid in the digital

transformation of their organization. We questioned the consultants on the clarity and completeness of the model's dimensions. Based on their input and a further consultation of the literature, we then refined the definition and scope of the dimensions. Figure 5 displays the 15 final dimensions laying the foundation for the generalist DMM.

Phase V: Conception of Transfer and Evaluation

Phase V focuses on making the conceptual DMM measurable and applicable in practice. In this phase, the 15 dimensions were translated into assessment items that capture their key characteristics in observable form. The initial item pool was derived from the literature review, expert input, and author discussions, and was subsequently refined through content-validity checks with academic and practitioner experts. The resulting statements were measured on a five-point Likert scale and served as the basis for the empirical assessment. For the case application, item-level ratings were aggregated into dimension scores, dimension scores into pillar scores, and pillar scores into the overall maturity score and corresponding maturity level.

#	Pillar	Dimension	Dimension Criteria	Assessment Item
1	Broader Organisation	Business Model	Digital business model	We regularly evaluate new digital business models and integrate them into the corporate strategy where appropriate.
2	Broader Organisation	Business Model	Diversification into digital business fields	In addition to the main business model, we are investing in new digital business models.
3	Broader Organisation	Collaboration	Best practices	Experiences and best practices from internal projects are communicated and implemented across departments in the company.
4	Broader Organisation	Collaboration	Use of collaborative technologies	Employees for whom it makes sense can work remotely and unrestricted at any time.
5	Broader Organisation	Collaboration	Working mobile	Employees for whom it makes sense can work mobile and unrestricted at any time.
6	Broader Organisation	Culture & Expertise	Assessment of digital competencies	We know the digital competence level of each employee.
7	Broader Organisation	Culture & Expertise	Assessment of digital competencies	We regularly test the digital competence level of each employee on a scientific basis.
8	Broader Organisation	Culture & Expertise	Assessment of digital competencies	The evaluation of the digital competencies of the applicants is based on scientific criteria.
9	Broader Organisation	Culture & Expertise	Culture of mistakes	We communicate and evaluate mistakes and lessons learned from projects without negative consequences for employees.
10	Broader Organisation	Culture & Expertise	Employee commitment to digital transformation	Our employees are actively involved in digital initiatives.
11	Broader Organisation	Culture & Expertise	Employee commitment to digital transformation	Our employees welcome the steady digitization of the company and recognize the opportunities.
12	Broader Organisation	Culture & Expertise	Propagation of digital competencies	We continuously invest in the digital skills of our employees through training and development.

#	Pillar	Dimension	Dimension Criteria	Assessment Item
13	Broader Organisation	Culture & Expertise	Propagation of digital competencies	Digital skills are a decisive criterion when hiring new employees.
14	Broader Organisation	Customer Experience	Customer data analytics	We regularly evaluate customer data on a large scale and in a targeted manner.
15	Broader Organisation	Customer Experience	Customization of digital offerings across channels	Across all channels, we individualize our digital offerings.
16	Broader Organisation	Operational Processes	Adaptability of processes	We adapt processes at short notice to respond to internal and external changes.
17	Broader Organisation	Operational Processes	Continuous reevaluation of business processes	We have a committee that captures business processes and addresses their improvement.
18	Broader Organisation	Operational Processes	Process efficiency	Our company has efficient business processes.
19	Information Technology	IT Automation, Integration and Security	Data security	We encrypt sensitive data according to the highest industry standards.
20	Information Technology	IT Automation, Integration and Security	Data security	We have strict data policies and train all employees on a regular basis.
21	Information Technology	IT Automation, Integration and Security	Data security	We have strict access control policies.
22	Information Technology	IT Automation, Integration and Security	IT integration	Our entire value chain is covered by connected IT systems.
23	Information Technology	IT Automation, Integration and Security	IT integration	Our IT systems have external connections to e.g. suppliers/customers.
24	Information Technology	IT Automation, Integration and Security	IT security	We are aware of our company-specific risk situation with regard to cyberattacks and regularly review the cyber risk.
25	Information Technology	IT Automation, Integration and Security	IT security	We have cyber risk insurance.
26	Information Technology	IT Automation, Integration and Security	IT security	We have the latest intrusion detection systems (IDS).
27	Information Technology	IT Automation, Integration and Security	IT security	Our IT and data security is adapted to the company-specific cyber risk level.
28	Information Technology	IT Automation, Integration and Security	Process automation	We have fully automated business processes.
29	Information Technology	IT Usability	Functional IT support	Every employee receives IT support within 24h.
30	Information Technology	IT Usability	Intuitive and easy-to-use software	From 1–5 – What role do user-friendliness and intuitive application play in the purchase or development of software?
31	Information Technology	Requirements Management	Continuous evaluation of IT Infrastructure	We have a committee that reviews the quality of the company's IT infrastructure.

#	Pillar	Dimension	Dimension Criteria	Assessment Item
32	Information Technology	Requirements Management	IT satisfies requirements imposed by business	We identified needs and requirements of the company for IT.
33	Information Technology	Requirements Management	IT satisfies requirements imposed by business	IT fully meets the needs and requirements of our company.
34	Information Technology	Requirements Management	Software monitoring	Our company has quality and productivity standards for software applications.
35	Information Technology	Technology Change Management	Identification and evaluation of new technologies	We have a committee that regularly reviews new technologies for their benefit to the company.
36	Information Technology	Technology Change Management	Transfer of technologies into the organization	We have standards for introducing new technologies into the company.
37	Management	Designated Roles	Designated roles	In the last 5 years, we have introduced new job descriptions with reference to digital transformation (e.g. Chief Digital Officer, Chief Data Officer, Data Scientist, IOT Engineer, Cloud Integrator, User-Experience Designer).
38	Management	Designated Roles	Designated roles	We have defined responsibilities in the company with digital transformation in mind.
39	Management	Designated Roles	Clear reporting structure	We have clear hierarchy levels within our company.
40	Management	Digital Strategy	Adequacy of available resources	Our company has sufficient resources for the digital transformation of the company.
41	Management	Digital Strategy	Commitment to digital transformation	From 1–5 – How important is digital transformation in corporate strategy?
42	Management	Digital Strategy	Communication of strategy	We regularly inform our employees digitally and analogously about the current corporate strategy.
43	Management	Digital Strategy	Identification of strengths	We have identified the strengths and weaknesses of our company with regard to Digital Transformation.
44	Management	Digital Strategy	Implementation of strategy for digital transformation	The measures required for digital transformation are implemented.
45	Management	Digital Strategy	Strategy for digital transformation	We have an action plan that addresses and prioritizes all relevant topics of digital transformation.
46	Management	Management Support	Middle management support	Our middle management drives the implementation of digital projects.
47	Management	Management Support	Top management support	Leading bodies of our company are driving forward the digital transformation and providing the appropriate resources.
48	Management	Management Support	Top management support	Control and responsibility for digital transformation lies at the top management level.
49	Management	Performance Measurement	Definition of KPIs	We have defined and communicated key performance indicators that are critical to success, taking digital transformation into account.
50	Management	Performance Measurement	Evaluation and improvement of KPIs	We regularly review key performance indicators that are critical to success and adjust them if necessary.
51	Management	Performance Measurement	Incentivisation of employees	We have anchored key performance indicators that are critical to success in connection with the digital transformation in the employees' target agreements.

#	Pillar	Dimension	Dimension Criteria	Assessment Item
52	Management	Product Innovation	Digital offer complementation	To complement our products and services, we offer digital companion services.
53	Management	Product Innovation	Digital offer development	We take customer feedback into account when developing new products and services.
54	Management	Product Innovation	Digital offer development	We incorporate employee ideas when developing new products and services.

Table 6. Assessment Catalogue

Bios

Tristan Thordsen is an AI advisor in the pharmaceutical industry and a lecturer at ESCP Business School Berlin. He holds a doctorate (Dr. rer. pol.) from ESCP Business School. His research and advisory work center on digital transformation, digital maturity assessment, and the organizational adoption of artificial intelligence, combining Design Science Research with hands-on industry experience. His work has been published in peer-reviewed information systems journals and presented at leading international conferences, including ICIS. He has worked with organizations across the media, automotive, and healthcare sectors on assessing and advancing their digital capabilities.

Matthias Murawski is a researcher and educator at the intersection of digital management, digital business models, and organizational transformation. As Professor of Digital Management at FOM University of Applied Sciences in Berlin, he explores how digital competencies and technological change shape the strategies and business models of contemporary organizations. Through his research and teaching, Matthias examines how companies build the capabilities needed to navigate digital transformation, connecting theoretical insight with practical relevance for management education.

Markus Bick is a Full Professor and Chair of Business Information Systems at ESCP Business School. He earned a PhD in business information systems from the University of Duisburg-Essen (Germany) and a Diploma (MSc equivalent) in business information systems from the University of Essen (Germany). Inside ESCP Business School he has held various local academic director positions (bachelor's or master's) and currently he serves the MBA as director of studies. His current research interests focus on digital transformation including digital competencies and digital maturity models, explainable AI, trust in LLMs, gamification, knowledge management, and Web 3.0 technologies. Based on his research he has led various customized education programs (e.g., for a large TelCo or an international buying group) and engaged in several application orientated research and consultancy projects (e.g., media industry) as well. He publishes his work regularly in renowned international journals (e.g., *Information & Management*, *Decision Support Systems*, *Electronic Markets*, *Business Information Systems Engineering*, *Information Systems Management*, *Information Systems Frontiers*). In addition, he acts as a senior editor of two reputed peer-reviewed journals: *Electronics Markets* and *Information Systems Management*.