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## INTERRELATION OF BUSINESS PROCESS MATURITY AND SPIRAL DYNAMICS STAGES IN ENTERPRISES

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**Abstract.** The article explores the correlation between business process maturity levels and organizational development stages, as defined by the Spiral Dynamics framework. The research object is technology-intensive enterprises undergoing scaling and digital transformation. The methodological approach integrates maturity assessment tools, including process audits, structured interviews, and integrated maturity process index (MPI) calculation, with Spiral Dynamics diagnostics based on adapted questionnaires, hierarchy index analysis, and critical incident interviews. Results demonstrate a statistically significant correlation between process maturity and organizational value stages. Case analysis revealed that IT startups tended to shift from Orange to Green stages, while GMP-certified plants maintained Blue dominance despite advanced process maturity. The findings highlight cultural alignment as a decisive factor for successful digital transformation. Practical recommendations are proposed for phased standardization in early-stage organizations, cultural adaptation strategies in regulated enterprises, and conflict-resolution mechanisms in hybrid environments.

**Keywords:** business process maturity, spiral dynamics, organizational development, cultural alignment, digital transformation, process management, IT startups, regulated industries, innovation hubs, organizational culture

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Научная статья

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## СООТНОШЕНИЕ УРОВНЕЙ ЗРЕЛОСТИ БИЗНЕС-ПРОЦЕССОВ И СТАДИЙ РАЗВИТИЯ ПО СПИРАЛЬНОЙ ДИНАМИКЕ В ПРЕДПРИЯТИЯХ

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**Аннотация.** Статья посвящена анализу взаимосвязи между уровнем зрелости бизнес-процессов и стадиями организационного развития, определяемыми в рамках модели спиральной динамики. Объектом исследования выступают предприятия высокотехнологичных отраслей, находящиеся в стадии масштабирования и цифровой трансформации. Методологический подход включает применение инструментов оценки зрелости, в том числе аудита процессов, структурированных интервью и расчёта интегрального индекса зрелости процессов (MPI), в сочетании с диагностикой по спиральной динамике на основе адаптированных опросников, анализа индекса иерархичности и метода критических инцидентов. Результаты показали статистически значимую корреляцию между уровнем зрелости процессов и стадиями ценностного развития организаций. Кейс-анализ выявил, что IT-стартапы имеют тенденцию перехода от стадии «Оранжевой» к «Зелёной», тогда как предприятия с сертификацией сохраняют доминирование «Синей» стадии, несмотря на высокий уровень зрелости процессов. Полученные результаты подчеркивают, что культурное согласование является ключевым фактором успешной цифровой трансформации. В практическом плане предложены рекомендации по поэтапной стандартизации для организаций раннего развития, стратегиям культурной адаптации для регулируемых отраслей, а также механизмам разрешения конфликтов в гибридных организационных средах.

**Ключевые слова:** зрелость бизнес-процессов, спиральная динамика, организационное развитие, культурное согласование, цифровая трансформация, управление процессами, IT-стартапы, регулируемые отрасли, инновационные хабы, организационная культура

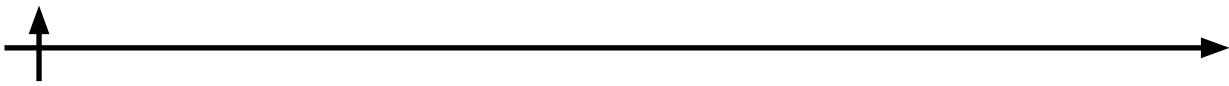
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### Introduction

The object of this study is organizations operating in technology-intensive industries – primarily IT scale-ups, pharmaceutical plants under GMP regulation, and corporate innovation hubs – where business process formalization and cultural transformation occur simultaneously. These companies face the dual challenge of achieving process standardization while adapting their organizational culture to conditions of rapid growth and digitalization. The selected organizations represent sectors where both the requirements for regulatory compliance and the need for continuous innovation are especially acute, making them appropriate cases for examining the interplay between process maturity and cultural development.

The relevance of the study arises from the fact that most digital transformation initiatives fail



to achieve their intended outcomes. According to Gartner (2023), nearly 70% of such programs underperform, while McKinsey (2022) identifies cultural resistance as the primary barrier to sustainable transformation. Even organizations that achieve high maturity levels in terms of business process management (e.g.,  $\text{MPI} > 4.0$ ) often fail to realize the expected benefits because of cultural inertia. Conversely, organizations with adaptive cultural systems sometimes embrace innovation but lack the process discipline needed for scaling. These findings highlight that process formalization and cultural adaptability represent complementary but not interchangeable drivers of organizational success.

A significant body of literature exists on Business Process Maturity Models (BPMM). Frameworks such as CMMI, ISO 330xx, PEMM, OPM3, and more recent approaches describe progressive stages of maturity from ad-hoc to optimized processes (Van Looy, 2021). Studies emphasize their role in improving quality, predictability, and efficiency (Flehsig et al., 2022). BPMM applications have expanded beyond IT and software engineering to include healthcare, manufacturing, logistics, and other domains, confirming their relevance as universal tools for organizational development. At the same time, critical reviews note that maturity assessments often overlook soft factors such as leadership styles, communication practices, and organizational values, which are essential for sustainable change.

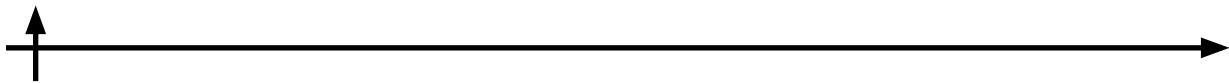
Parallel to this, Spiral Dynamics identifies successive developmental tiers within collective value systems. These include a tier centered on structure, discipline, and adherence to established authority (traditionally associated with a “Blue” coding), followed by a tier oriented toward strategic innovation, individual achievement, and competitive market dynamics (often coded as “Orange”). The progression further extends to a tier that prioritizes communal well-being, collaborative networks, and empathetic, consensual decision-making frameworks (typically referenced with a “Green” code). These distinct value configurations become materially embedded in an organization’s structural design and its prevailing operational and managerial methodologies (Martinek-Jaguszewska et al., 2022). Recent empirical studies demonstrate the applicability of Spiral Dynamics to diagnosing organizational readiness for transformation, especially in the context of cross-cultural and knowledge-intensive environments (Schunter, 2025).

Nevertheless, the intersection of these two perspectives remains underexplored. Existing studies either focus on process formalization without considering cultural dynamics or analyze cultural evolution independently of process maturity. Research linking the two – for example, examining how maturity levels correlate with specific value stages – is scarce. While maturity models provide metrics for assessing procedural development, and Spiral Dynamics highlights cultural readiness, there is limited work that empirically integrates these approaches to capture their combined effect on transformation outcomes.

This work builds on the contributions of Van Looy (2021) in comparative analysis of maturity models, Flehsig et al. (2022) in studying digital transformation maturity, and Olsen et al. (2023) in exploring cultural barriers to organizational change. It also draws on recent studies that adapt Spiral Dynamics to organizational contexts, synthesizing insights from both streams of literature. By integrating these perspectives, the study addresses the identified gap and provides a framework for analyzing dual dependencies of process maturity and cultural stage.

The aim of the study is to analyze the correlation between business process maturity levels and organizational development stages as defined by Spiral Dynamics. To achieve this aim, the following objectives are set:

1. To identify representative organizational contexts where both process maturity and cultural dynamics are observable.
2. To design a methodology integrating maturity assessment (MPI) and Spiral Dynamics



diagnostics.

3. To validate correlations empirically through case studies in IT, pharmaceutical, and innovation hub environments.
4. To interpret the implications of mismatches between process maturity and cultural stages for managers and policymakers.

## Materials and Methods

The study was designed as a multiple case analysis of organizations operating in technology-intensive industries. This approach was selected because it enables comparative insights across different contexts while preserving the depth of within-case investigation. The analysis covered three categories of organizations, representing distinct regulatory and operational environments:

1. IT scale-ups (50–500 employees), characterized by rapid growth, implementation of Agile/DevOps practices, and transitions from entrepreneurial to more formalized structures. These companies were chosen because they frequently face challenges of codifying informal knowledge and scaling collaborative practices into standardized processes.
2. Pharmaceutical and aviation manufacturers, operating under strict GMP and IATF compliance. These firms are subject to high requirements for process documentation, risk management, and external audits. They represent a context where maturity models are often applied, but cultural adaptability is limited by formal regulations.
3. Corporate innovation hubs, functioning as adaptive units embedded in larger bureaucratic organizations. These entities often display divergence between their own progressive culture and the conservative environment of parent companies, making them valuable for exploring conflicts between maturity and cultural alignment.

Organizations were selected according to two inclusion criteria: (1) the availability of reliable and verifiable data on process maturity, and (2) evidence of observable cultural patterns that could be consistently mapped to Spiral Dynamics stages (Szelagowski et al., 2024). Cases that lacked transparency or sufficient access for data triangulation were excluded.

Data were collected using a triangulation approach, which combined artifacts, structured interviews, and direct observation. This design was intended to minimize bias and ensure robust validity.

Artifact audits included the examination of documented process outputs:

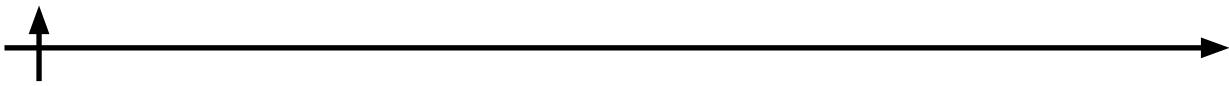
1. IT companies: GitHub commit frequency, unit test coverage (>70% threshold), and CI/CD build success rate (>85%) were used as indicators of technical process discipline.
2. Manufacturing companies: PFMEA maps, MES downtime logs (>300 events per quarter), and SCADA deviations provided objective metrics of operational stability.
3. Pharmaceutical companies: GMP deviation reports and CAPA closure times reflected compliance and corrective practices.

Structured interviews were conducted with middle managers, team leaders, and compliance officers. A standardized protocol was developed using OPM3 and ISO/IEC 330xx as reference frameworks (Olsen et al., 2023). Sample questions included:

1. “What criteria are used to trigger process redesign?”
2. “Which KPIs are monitored to ensure process stability?”
3. “How are deviations escalated and resolved?”

Interviews were audio-recorded, transcribed verbatim, and analyzed through grounded theory coding. Codes were validated by two independent researchers to increase inter-coder reliability.

Direct observation consisted of shadowing 3–5 critical process cycles within each organization. Observers mapped process execution against ISO/IEC 33020 benchmarks, recording



deviations and corrective actions. Field notes were later compared with formal documentation to validate consistency (Moedt et al., 2024).

Business process maturity was assessed using the Maturity Process Index (MPI), defined as:

$$MPI = \frac{\sum (W_i * L_i)}{N}$$

where  $W_i$  is the weight assigned to process area  $i$  (e.g., R&D = 0.4, Quality Control = 0.3, Supply Chain = 0.3),  $L_i$  is the maturity level (1–5), and  $N$  is the number of processes evaluated (Shcheleyko and Kreshtinkova, 2024).

This weighted composite score allowed for differentiation between sectors where certain processes (e.g., R&D in IT, Quality Control in Pharma) are disproportionately critical to performance.

Organizational culture was assessed using the Spiral Dynamics Index (SD\_Index), a composite measure integrating three diagnostic instruments (Feld, 2022):

1. GVST–4 questionnaire, adapted for organizational contexts. Reliability testing yielded Cronbach's  $\alpha > 0.80$ .
2. Hierarchy Index (HI), derived from linguistic analysis of internal documents. Ratios of directive vs. cooperative verbs were calculated, with values such as Pharma HI = 2.5 and IT HI = 1.1.
3. Critical Incident Technique (CIT), applied through interviews focusing on company responses to crises such as regulatory audits, product recalls, and scaling bottlenecks.

The composite index was calculated as:

$$SD\_Index = 0,4 * GVST + 0,3 * HI + 0,3 * CIT$$

This weighting scheme was chosen to balance psychometric reliability (GVST) with behavioral and documentary evidence (HI and CIT).

To ensure reproducibility and robustness of results:

1. Reliability. All instruments were tested using Cronbach's  $\alpha$ , with thresholds above 0.70 considered acceptable. Inter-coder reliability in qualitative coding exceeded 85% (Baroiu, 2022).
2. Triangulation. Artifact audits, interview data, and observational data were cross-validated. Discrepancies between sources were explicitly documented and analyzed.
3. Statistical testing. Spearman's rank correlation was used to test monotonic relationships, while linear regression models were applied to evaluate predictive validity of MPI for SD\_Index (Ilyin, 2022).
4. Ethical considerations. All participants were informed about the purpose of the study, and sensitive data (e.g., audit results, incident reports) were anonymized before analysis.

## Results and Discussion

The quantitative analysis revealed a statistically significant positive correlation between process maturity and cultural development stages. The linear regression demonstrated  $R^2 = 0,61$ , with  $p < 0,05$ , indicating that process maturity is a reliable predictor of organizational culture alignment (Aubouin-Bonnadventure et al., 2023). This result suggests that improvements in the formalization of processes are generally accompanied by movement to higher value stages within Spiral Dynamics.

Figure 1 shows the regression relationship between MPI and SD\_Index, confirming the presence of a linear dependency. However, not all organizations followed the trend equally. Outliers, such as pharmaceutical plants with MPI above 4.0 but stagnating SD\_Index values, indicate a mismatch between formalized processes and conservative cultural environments (Portner, 2025). This demonstrates that regulatory-driven maturity may create an illusion of development, while cultural inertia continues to dominate organizational behavior.

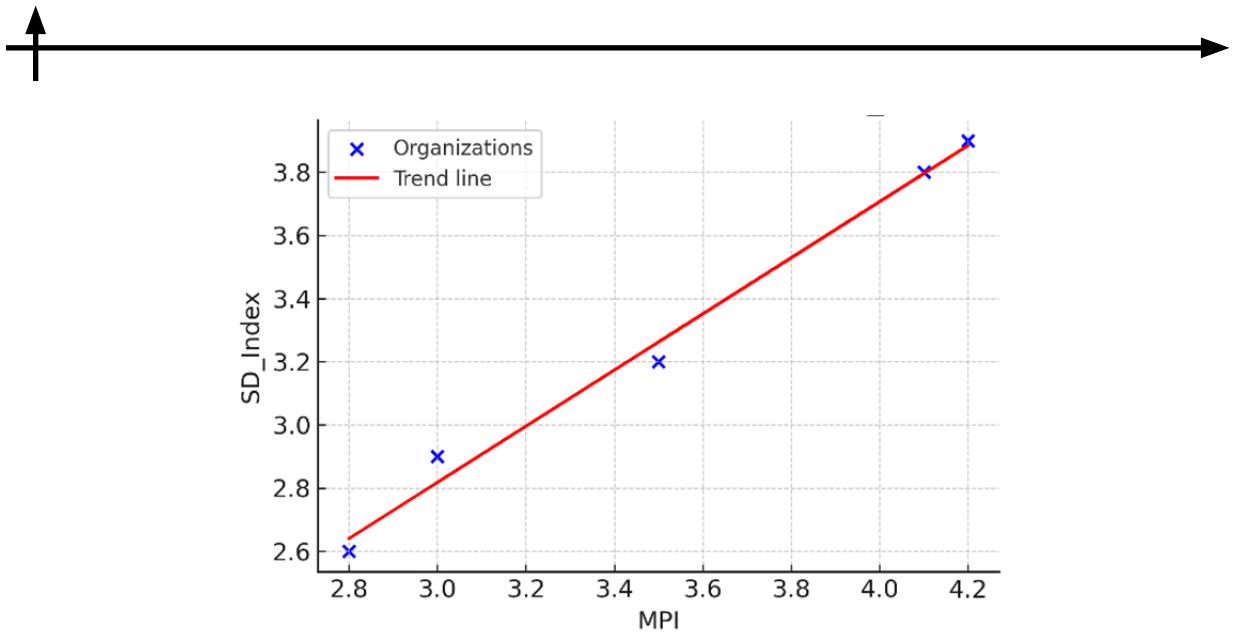


Fig. 1. Regression between MPI and SD\_Index.

Table 1 summarizes the average MPI and SD\_Index values across sectors. The analysis shows clear sectoral distinctions.

1. IT companies are characterized by relatively low MPI ( $\approx 2.9$ ) but a higher SD\_Index ( $\approx 3.2$ ). This combination indicates adaptability, openness to innovation, and reliance on Agile principles, but weak formalization of supporting processes.
2. Pharmaceutical plants demonstrate advanced process maturity ( $\approx 4.3$ ), driven by GMP compliance and audits, yet cultural indices remain low ( $\approx 3.0$ ). These organizations maintain rigid hierarchical Blue structures, prioritizing stability and control over adaptability.
3. Innovation hubs represent an intermediate case ( $\text{MPI} \approx 3.5$ ,  $\text{SD\_Index} \approx 3.3$ ). They combine elements of flexibility and formalization but frequently encounter cultural conflicts between progressive subunits and conservative parent organizations (Okushola and Levina, 2025).

**Table 1. Average MPI and SD\_Index across sectors.**

Sector	MPI (avg.)	SD_Index (avg.)	Interpretation
IT scale-ups	2.9	3.2	Adaptive but weakly formalized
Pharma plants	4.3	3.0	Process-driven, culturally rigid
Innovation hubs	3.5	3.3	Balanced but conflict-prone

Figure 2 visualizes these differences in the form of bar charts, highlighting how sectoral context moderates the MPI-SD relationship.

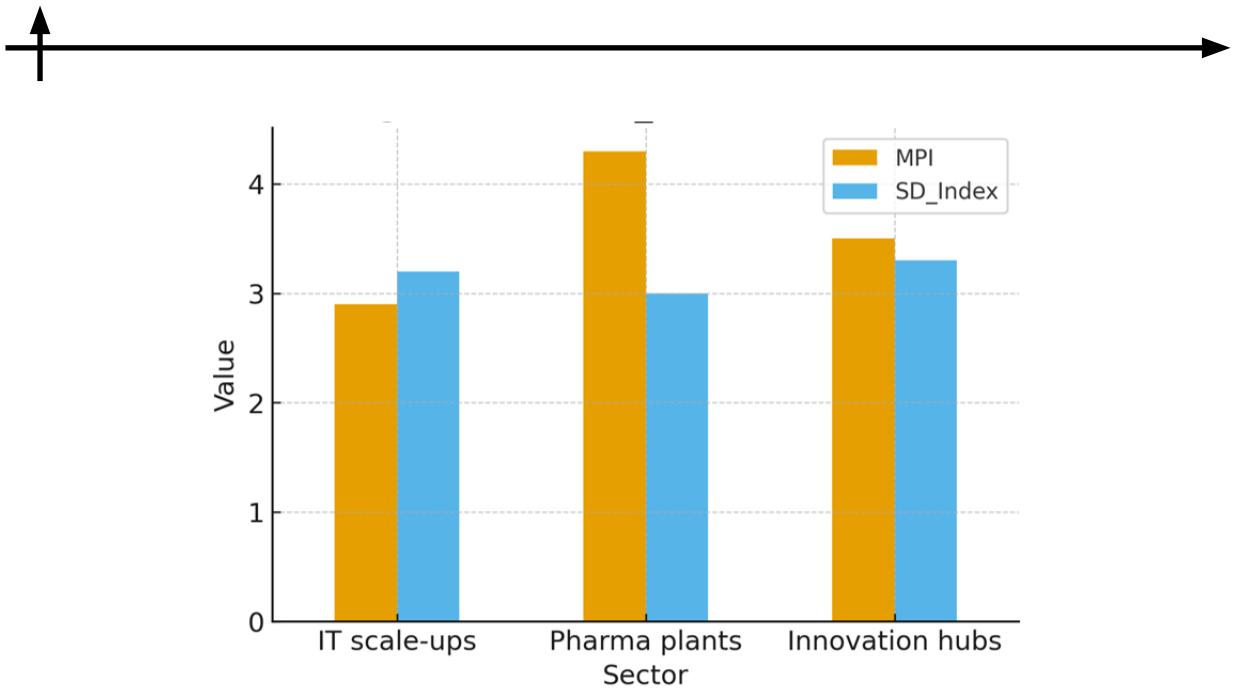


Fig. 2. Average MPI and SD\_Index across sectors.

A more granular analysis was performed for three key domains: R&D, Quality Control, and Supply Chain. Figure 3 presents radar charts of process maturity across these domains.

1. Pharmaceutical companies show consistently high maturity values across all domains due to regulatory requirements. Their strength lies in balanced development, though cultural rigidity remains a limiting factor.

2. IT firms demonstrate strong R&D orientation but underinvestment in quality control and supply processes. This creates innovative but unstable environments where product scaling is difficult.

3. Innovation hubs reveal asymmetry: high R&D maturity contrasts with fragmented operational domains, reflecting their dual role as experimental units within corporate frameworks (Lopez and Hildebrandt, 2024).

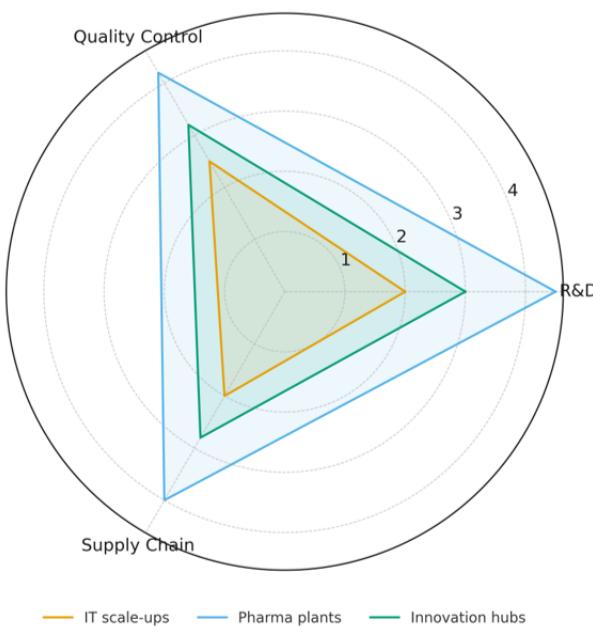
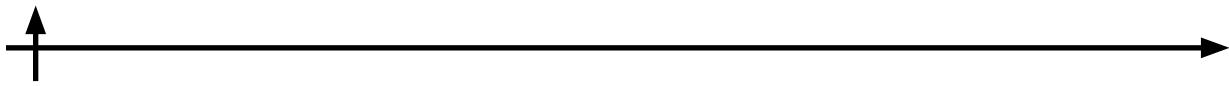


Fig. 3. Process maturity profiles by sector.



Beyond the sectoral averages, the analysis revealed that variance within individual organizations was sometimes more significant than variance between sectors. For example, in several IT firms, R&D maturity was assessed at level 4, while Quality Control remained at level 2, indicating an imbalance between innovation and operational stability. In contrast, pharmaceutical plants demonstrated consistently high maturity across domains, but their SD\_Index values stagnated, reflecting cultural resistance to change (Shishkina et al., 2025). These intra-organizational discrepancies suggest that maturity assessments should not be limited to aggregated MPI values but must also capture domain-level dynamics that directly influence the success of transformation initiatives.

Despite the overall correlation, several cases revealed misalignment between maturity levels and cultural stages. Table 2 summarizes representative mismatch cases.

1. Pharmaceutical plant (MPI = 4.2, SD\_Index = 3.0): despite very high maturity, cultural dominance of Blue values prevents adoption of more adaptive practices. Transformation projects stall due to resistance from middle management.

2. Startup (MPI = 2.8, SD\_Index = 3.5): processes remain informal, yet the culture is oriented toward collaboration and experimentation (Green). This creates rapid innovation cycles but exposes the company to risks when scaling (Castelli et al., 2025).

These results demonstrate that high maturity does not guarantee cultural readiness for transformation, and vice versa. Misalignment represents a critical barrier for sustainable digital transformation.

**Table 2. Mismatch cases between MPI and SD\_Index.**

Organization	MPI	SD_Index	Mismatch Description
Pharma Plant	4.2	3.0	High maturity, but conservative Blue culture
Startup	2.8	3.5	Low maturity, but adaptive Green culture

To translate findings into practice, Table 3 presents managerial scenarios.

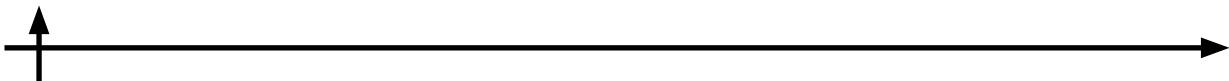
1. High MPI – Low SD\_Index: bureaucratic rigidity dominates. In such cases, investments into cultural adaptation, leadership development, and employee engagement are necessary before further process optimization (Ivanova and Bardina, 2022).

2. Low MPI – High SD\_Index: lack of standardization leads to operational inefficiencies. Here, lightweight frameworks (e.g., SAFe, Lean startup formalization) should be introduced to stabilize scaling without destroying cultural flexibility.

3. Balanced MPI–SD: organizations in this zone demonstrate integrated transformation potential. For them, the recommendation is to scale processes systematically while preserving adaptability as a competitive advantage.

The observed discrepancies between maturity and cultural alignment have direct managerial consequences. Organizations with high maturity but stagnant cultural development tend to underperform in innovation projects, as strict compliance systems discourage experimentation. Conversely, firms with adaptive cultures but weak formalization face difficulties in scaling, since the absence of standardized processes leads to operational inefficiencies. These patterns highlight the importance of dual monitoring: managers should evaluate not only process indicators such as MPI but also cultural readiness as captured by SD\_Index (Brock et al., 2024). Integrating both perspectives allows decision-makers to anticipate transformation risks and design targeted interventions.

This framework provides a diagnostic tool that managers can apply when deciding whether to focus resources on process improvements, cultural change, or integrated strategies.



**Table 3. Managerial implications of MPI–SD alignment.**

MPI–SD Scenario	Observed Challenge	Recommended Action
High MPI – Low SD_Index	Bureaucratic rigidity	Invest in cultural adaptation and change programs
Low MPI – High SD_Index	Lack of standardization	Introduce lightweight frameworks
Balanced MPI – SD	Integrated transformation	Scale processes while preserving adaptability

The findings support Gartner (2023), which emphasized cultural resistance as the dominant barrier to digital transformation. They also extend McKinsey's (2022) conclusion that up to 70% of transformation initiatives fail due to cultural misalignment (Gugelev and Chistyakova, 2024).

Previous works on BPMM confirmed the role of maturity in ensuring reliability and efficiency but largely ignored cultural dimensions. Conversely, studies applying Spiral Dynamics to organizations highlighted value systems but without connecting them to formal process assessments (Shishkina et al., 2025).

By integrating both perspectives, this study provides evidence that organizational transformation depends on dual alignment: technical process maturity and cultural stage (Gugelev and Chistyakova, 2024). This dual dependency model offers explanatory power beyond traditional BPMM and cultural frameworks when applied separately.

The study confirmed a direct positive dependency between the Maturity Process Index (MPI) and the Spiral Dynamics Index (SD\_Index), indicating that higher levels of process maturity are generally associated with more advanced cultural stages in organizations:

$$SD\_Index \propto MPI$$

where  $R^2 = 0,61$ ,  $p < 0,05$

To address the research objectives established in the introduction, the study yields the following conclusions regarding their fulfillment:

The research successfully identified and examined three distinct organizational types as case studies—IT scale-ups, pharmaceutical manufacturers, and corporate innovation hubs. Each type exhibited a unique configuration of process discipline and cultural profile, which facilitated a robust comparative analysis across sectors.

A novel methodology was constructed and empirically tested. This approach integrates the quantitative assessment of process maturity via the MPI with a composite diagnostic for cultural stage, the SD\_Index. The SD\_Index synthesizes findings from an adapted GVST-4 instrument, computational linguistic analysis, and the Critical Incident Technique (CIT).

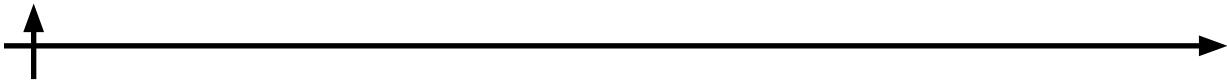
The practical application of this integrated methodology not only substantiated the general positive correlation between MPI and SD\_Index but also uncovered specific sectoral patterns and deviations. It enabled the documentation of concrete instances of misalignment between process maturity and cultural development.

Based on the detailed analysis of these misalignment cases, the study formulated specific managerial scenarios and actionable recommendations (see Table 3). These guidelines prescribe tailored interventions based on the diagnosed imbalance between procedural maturity and cultural advancement, thereby equipping practitioners with a practical diagnostic tool.

It was established that sectoral context moderates this relationship:

1. IT companies exhibit a relatively lower MPI paired with a higher SD\_Index, indicating a context where cultural adaptability is high, but formalization remains underdeveloped.

2. Pharmaceutical enterprises demonstrate a high MPI yet a stagnating SD\_Index, revealing a reality of mature, compliance-driven processes coexisting with cultural rigidity.



3. Innovation hubs present intermediate outcomes, frequently characterized by internal subcultural tensions between their agile units and the more traditional parent organizations (Kravchenko et al., 2022).

A nonlinear dependency was observed: high maturity does not always lead to cultural adaptability, and cultural flexibility does not always result in process reliability (Khalifa et al., 2021). This demonstrates that the relationship between process maturity and cultural stage is conditional upon regulatory and organizational environments.

The analysis of mismatch cases showed that deviations from the general correlation represent critical transformation risks. Organizations with  $\text{MPI} > 4.0$  but low  $\text{SD\_Index}$  face cultural inertia, while those with  $\text{MPI} < 3.0$  but high  $\text{SD\_Index}$  face risks of operational inefficiency.

Managerial recommendations were derived as conditional dependencies:

1. For  $\text{MPI} > 4.0$  and  $\text{SD\_Index} < 3.2$ : cultural transformation programs must precede further process optimization.
2. For  $\text{MPI} < 3.0$  and  $\text{SD\_Index} > 3.2$ : lightweight formalization frameworks should be introduced to stabilize scaling.
3. For  $3.0 < \text{MPI}$  with balanced  $\text{SD\_Index}$ : organizations are positioned for sustainable integration of culture and processes.

A dependency was established between specific process domains and cultural orientation: IT companies emphasize R&D maturity while underinvesting in quality control, whereas pharmaceutical plants balance all domains due to compliance pressure (Matys, 2022).

Comparison with previous research confirmed that the integration of BPMM and Spiral Dynamics provides explanatory power beyond either model individually. Dependencies identified here expand on earlier BPMM studies (Skokova et al., 2024) by introducing cultural moderators, and complement Spiral Dynamics applications (Levina and Galanova, 2022) by embedding process formalization metrics.

The combined findings establish that digital transformation success depends on dual alignment:

$$\text{Success} = f(\text{MPI}, \text{SD\_Index})$$

where both maturity and cultural development act as necessary and interdependent conditions.

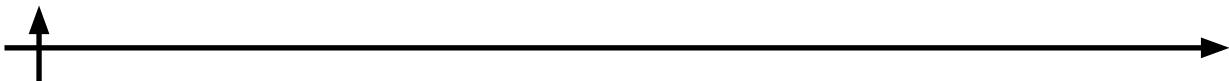
## Conclusion

The present study was aimed at analysing the correlation between business process maturity levels (assessed via the Maturity Process Index, MPI) and organisational development stages (measured through the Spiral Dynamics Index, SD\_Index). The research objectives included:

1. identifying representative organisational contexts where both process maturity and cultural dynamics are observable;
2. designing an integrated methodology combining MPI and Spiral Dynamics diagnostics;
3. empirically validating correlations through case studies in IT, pharmaceutical, and innovation hub environments;
4. interpreting the implications of mismatches between process maturity and cultural stages for managers and policymakers.

All objectives have been successfully addressed. Key findings and contributions:

1. The study revealed a statistically significant positive relationship between MPI and SD\_Index ( $R^2 = 0,61$ ,  $p < 0,05$ ), demonstrating that higher process maturity generally aligns with more advanced cultural stages in organisations.
2. Distinct configurations were identified across sectors:
  - IT scale-ups show lower MPI ( $\approx 2.9$ ) but higher SD\_Index ( $\approx 3.2$ ), reflecting adaptability



and innovation orientation despite weak formalisation.

— Pharmaceutical plants exhibit high MPI ( $\approx 4.3$ ) but stagnating SD\_Index ( $\approx 3.0$ ), indicating process-driven rigidity and cultural conservatism.

— Innovation hubs display intermediate values ( $\text{MPI} \approx 3.5$ ,  $\text{SD\_Index} \approx 3.3$ ), often marked by internal cultural conflicts.

3. Cases of misalignment (e.g., high MPI with low SD\_Index or vice versa) were documented, highlighting risks such as bureaucratic inertia or operational inefficiency.

4. A novel diagnostic framework was developed, combining quantitative process assessment (MPI) with a composite cultural index (SD\_Index) that integrates psychometric, linguistic, and behavioural data.

The findings provide managers with a dual-lens tool to diagnose transformation readiness. By assessing both MPI and SD\_Index, organisations can:

1. identify imbalances between formalised processes and cultural adaptability;
2. tailor interventions (e.g., cultural change programs or lightweight formalisation frameworks) to address specific gaps;
3. mitigate risks associated with digital transformation failures due to cultural or procedural misalignment.

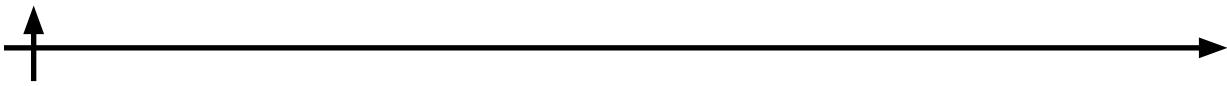
While the study establishes a robust correlation, several questions remain unexplored:

1. The causal direction of the MPI–SD\_Index relationship (i.e., whether process maturity drives cultural evolution or vice versa) requires longitudinal analysis.
2. The role of external factors (e.g., industry regulations, market volatility) in moderating this relationship merits deeper investigation.
3. Application of the framework to non-technology-intensive sectors (e.g., public administration, education) could test its generalisability.

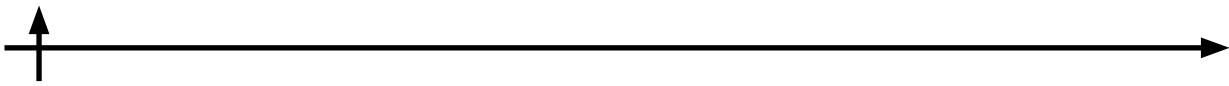
The research confirms that sustainable organisational transformation depends on the \*\*dual alignment\*\* of process maturity and cultural development. By integrating BPMM and Spiral Dynamics perspectives, the study offers both a diagnostic tool and a conceptual advance, bridging a critical gap in transformation literature. The results can inform strategic decision-making in scaling operations, cultural change initiatives, and regulatory compliance efforts across diverse organisational contexts.

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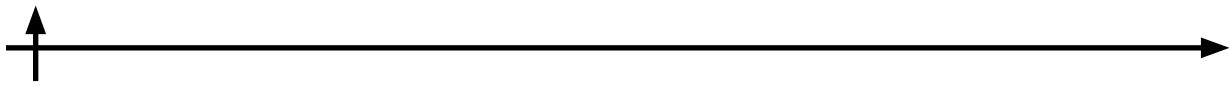


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