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Development of Management Competencies of Civil Servants in a Period of Systemic Changes

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ABSTRACT

Systemic change has altered the managerial role of the civil servants. Digitalization, hybrid work, artificial intelligence, new demands from citizens, as well as more complex inter-organizational coordination, has led to a greater demand for public managers who can combine administrative knowledge with digital understanding, adaptive leadership and continuous professional development. This article explores the topic of how management competencies of civil servants are developing at times of systemic change, focusing on digitalization and professional development in particular. The study is based on structured narrative review of the recent peer-reviewed and institutional literature, primarily from 2020 onwards. The findings indicate that management competency in the civil service is no longer confined to administrative control, compliance with the law or coordination of procedures. It now incorporates strategic digital literacy, collaborative leadership, communication competence, ethical judgement, data informed decision making, and the ability to develop learning in teams. The review also finds that effective competency development depends less on individual off-site training and more on integrated learning systems relating competency frameworks, assessment and feedback to work-based application. However, most public administrations still struggle with a gap between reform ambitions and capacity to implement them. The article argues that competency development should be a fundamental state capacity issue. Without capable managers, digital reform may be able to improve tools and service interfaces, but it will not necessarily improve institutional adaptability, service quality, or public value.

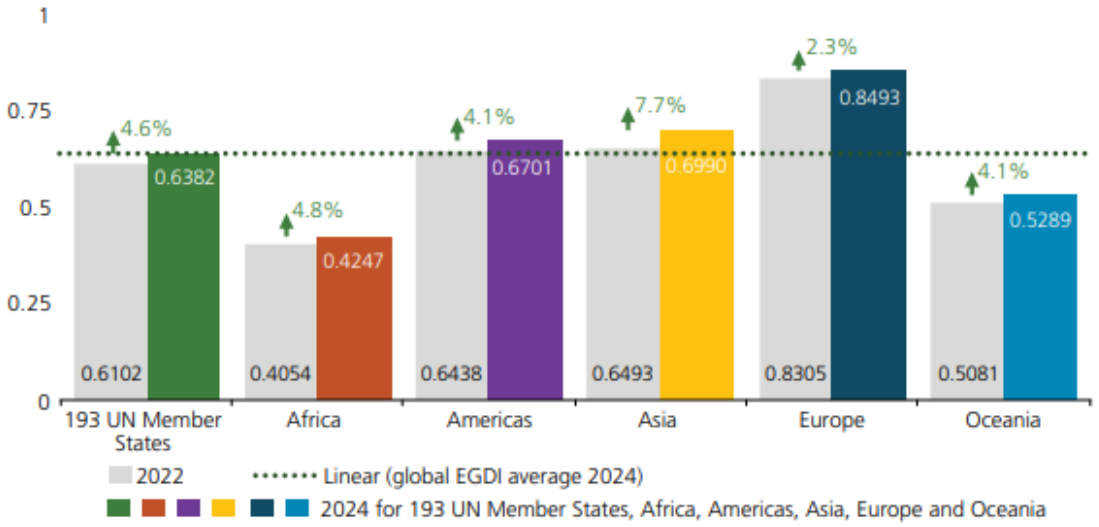
***Keywords*:** civil service, management competencies, digitalization, professional development, public administration, digital leadership.

Introduction

Public administration today is not determined by episodic cycles of reform but by recurring systemic pressures. Civil servants have been expected to respond to change in technology, organizational complexity, data-rich service delivery, hybrid working arrangements and more powerful demands for transparency and responsiveness. The process of digital government progress, the Organization for Economic Co-operation and Development (OECD) argues, is not just a question of technology, but also a question of the work environment, the workforce arrangements and skills of public servants (OECD, 2021). This implies that management competency has become a strategic factor, and not a marginal aspect relating to human resources. In practice, this shift has meant that expectations have grown of what is expected of public managers. They are no longer needed only for keeping administrative order

and compliance, but also for interpreting change, staff adjustment and institutional priorities in line with rapidly changing service environments. As a result, competency is increasingly associated with resilience, coordination and learning capacity in public organizations. The scale of these changes can be observed through international indicators. According to the United Nations E-Government Survey 2024 the average E-Government Development Index (EGDI) for the world has increased from 0.6102 in 2022 to 0.6382 in 2024 and the average Online Service Index (OSI) also saw an incredible increase (Figure 1). However, persisting inequalities between countries and between levels of government are also apparent from the same survey. Digital progress is therefore real but management capacity is uneven.

Figure 1: Global and regional E-Government Development Index averages, 2022 and 2024



Source: United Nations (2024)

Recent scholarship is supportive of the same conclusion. Ushaka Adie et al. (2024) demonstrate digital leadership in the public sector as the capacity for communication, collaboration, innovation and change, rather than limited technical ability. David et al. (2024) further determine that digital and communication competencies have a significant effect on the ability of public employees to adapt to change in the future of work paradigm. These findings suggest that the modern civil service manager must not only be a supervisor, but also a translator, a coach, and an organizational learner. This article deals with the development of the management competencies of civil servants in a time of systemic change. It is focused on two interrelated drivers including digitalization and professional development. Three questions are used to conduct the discussion:

1. What competencies are most important for public managers during times of systemic change?
2. How does digitalization transform the expectations of management?
3. What types of professional development are the best for competency building?

This study also considers the development of managerial competencies as a form of innovation in the public sector. In the context of digital transformation, innovations in public administration are not limited to the introduction of new technologies or digital platforms. They

also encompass the development of managerial capabilities that allow public institutions to adapt to change, coordinate transformation processes, improve decision-making and create public value in conditions of uncertainty. Thus, the transformation of managerial competencies of civil servants should be considered as an institutional innovation that strengthens the adaptive and strategic capacity of the state.

Literature Review

The literature review focuses on three interrelated aspects that determine the modern understanding of managerial competencies of civil servants. The expansion of the content of competencies in the context of digitalization, the growing importance of adaptive leadership, and the impact of digital transformation on the operational level of management, communication, and professional learning are considered.

Management Competency in the Digital-Era Civil Service

Recent literature increasingly defines competency as a combination of knowledge, skills, behaviours and judgement that can be used to achieve effective performance in context. In the field of public administration, this definition is particularly useful because managers operate under legal, political and ethical constraints and remain expected to innovate. Cordella et al. (2024) suggest that digital skills in the public sector should be viewed as the ability to design, implement and manage ICT-mediated policies in context not as the ability to use digital tools. This is an important distinction because there is no separation between public-sector digital work and the responsibilities of governance. Competency research also shows that managerial demands are growing. Popa et al. (2024) found that digitalization in Romanian public organizations had a positive impact on all the five classic management functions, namely, planning, organizing, coordinating, motivating, and controlling. A recent paper on civil servant competence frameworks argues that such frameworks are now necessary for modernizing public administration in the digital era because they provide a common language for recruitment, performance, and training (Mihaila, 2024).

Digital Leadership and Adaptive Capacity

Digital leadership has become a key theme in the research of public administration. Ushaka Adie et al. (2024) describe communication, collaboration, innovation, and the capacity to relate as fundamental factors of public sector digital leadership. Branderhorst and Ruijer (2025) also demonstrate in their study of Dutch city managers that local government digital leadership is an empirical and practical reality, rather than a theoretical one. In public organizations, digital transformation leadership is better understood as a combination of strategic vision, collaboration, attention to public preferences, and operational guidance for employees and internal processes, rather than as technical literacy alone (Van Roekel et al., 2025). The same point emerges in leadership research in general. Müller et al. (2024) identify digital transformation leadership competencies as a combination of technical, business, and people-oriented competencies while Schiuma et al. (2024) emphasize on transformative leadership competencies for organizational digital transformation. Adaptability as a key competency has also become a key competency.

David et al. (2024) demonstrates that digital and communication competencies have a significant impact on the readiness for the future of work in public administration. Looks et al. (2024) make similar arguments, agility in public administration can be measured and improved, but resistance to change is a central challenge. This suggests that good public management now depends more on building adaptive capacity and guiding change than on preserving stability alone (Danso and Opoku, 2025).

Frontline Change, Communication, and Professional Learning

Digital transformation is also impacting front-line and mid-level operations. Afzal and Panagiotopoulos (2024) in their study of policing in Pakistan, demonstrate that public officials adopt different coping mechanisms when digital systems alter the way they work and exercise discretion on a daily basis. Gräfe et al. (2024) further argues that digitalization and automation are transforming public administrative tasks and the associated competence requirements. This opens up discussions beyond senior leadership. Managers must assist staff to adjust at the operational level of the organization if reform is to be effective.

Communication is another visibility competency that is being seen more and more. Bokayev et al. (2024), researching Kazakhstan, demonstrate that communication barriers remain an important problem for public servants and that improved communication competencies are necessary to the effectiveness of public sector. Communication is therefore not a soft extra. It is part of management capacity in situations of institutional stress. Professional development research points in the same direction. Elliott et al. (2024) in a case study of Bahrain demonstrate that for effective civil service leadership development, structured and context-sensitive learning programs need to be provided. OECD work also stresses that competence frameworks, skills assessment and workplace learning should be linked if governments want capability building to become sustainable. This creates a shift in the thinking of training as an event to learning as a system.

Methodology

This article is based on a structured narrative review. The method employed was used as the topic integrates conceptual, empirical and policy-oriented literature from public administration, digital government, leadership and human resource development literature. The use of a structured review is suitable when it is necessary to synthesize patterns across a wide range of evidence and not a single causal effect. The review prioritized sources published from 2020 to 2025 and had a strong preference for peer reviewed journal articles and institutional major reports. The inclusion criteria were: relevance to civil service or public administration, explicit focus to competencies or digital transformation, publication in a credible journal or official institutional outlet and the practical relevance to management reform. OECD, UN and World Bank materials were included where they had comparative data, frameworks or policy guidance. The reviewed literature was coded into six recurring themes: strategic digital literacy, adaptive leadership, people development, communication and collaboration, ethical/public-value-judgment, and institutional learning systems. The aim was not to generate new primary data, but to construct an account of changing management competences in the face of systemic

pressure on the basis of evidence. The result is a synthetic analytical model that is based on recent research.

Results

In this study, public sector innovation is viewed not only as the introduction of new digital technologies or administrative tools, but also as the development of managerial and institutional capabilities that allow public authorities to adapt to systemic changes. In this context, the development of managerial competencies of public servants – in particular digital literacy, adaptive leadership, communication skills and learning capacity – is a form of organizational innovation that increases the efficiency of public administration and contributes to the creation of public value (Table 1).

Table 1: Summary of Results on Management Competencies of Civil Servants During Systemic Change

Finding	Evidence base	Result
1. Management competency is becoming broader and more integrated	The framework for digital talent and skills, as proposed by the Organization for Economic Cooperation and Development (OECD, 2021), argues that effective digital government requires three connected elements: the right working environment, the right skills, and the right workforce arrangements. Recent work on skills for digital government done by the Organization for Economic Cooperation and Development (OECD, 2021) also indicates that competence frameworks are used to identify, assess and develop the knowledge, skills and attitudes required for digital transformation in government.	Management competence is now no longer limited to procedural supervision, but also encompasses digital understanding, coordination and capability development.
2. Digitalization raises the value of adaptive leadership	Afzal and Panagiotopoulos (2024) found that public officials deal with digital transformation in various ways and that discretion influences the ways that they adapt in frontline public services. David et al. (2024) found that digital and communication competencies play a significant role in supporting public employees in preparing for the future of work. Branderhorst and Ruijer (2025) found Dutch city managers need the ability of vision which is value-based, an awareness of legitimacy and ethics, and the ability to stimulate digital competencies in themselves and public servants.	Managers become more important in times of digital change as they are required to guide adaptation, legitimacy and learning.
3. Professional development works best when it is systemic	OECD evidence says that competence frameworks can aid strategic approaches to digital government skills by connecting skills identification, assessment, learning opportunities, and recruitment. Elliott et al. (2024) found that effective civil-service leadership development benefits from structured programs that are linked to institutional practice.	One-off training is weaker than system-based learning based on frameworks, feedback and application in the workplace.
4. Uneven digital progress reveals uneven management capacity	The UN E-Government Survey 2024 (United Nations, 2024) reports that the global average EGDI rose from 0.6102 in 2022 to 0.6382 in 2024. The Survey also says that it covers all the 193 UN Member States and notes a significant upward trend in digital government and continued differences in capability and performance.	Competency development can't be one size fits all because of differences in digital maturity and administrative capacity at each system level.

Source: Author's synthesis based on OECD, UN, and peer-reviewed journal evidence

Finding 1: Management Competency Is Becoming Broader and More Integrated

The first result is the fact that management competency in the civil service now extends far beyond control over procedures and compliance orientation. The framework of skills and talent set out by the Organization for Economic Cooperation and Development (OECD, 2021) shows that digital transformation in the public sector requires, first, an enabler by the working environment; second, in the skills of the workforce; third, in the mechanisms that will enable and sustain those skills. OECD guidance on developing skills for digital government, goes on to say that competence frameworks help governments identify, assess and develop the knowledge, skills and attitudes necessary for digital transformation and service delivery. These findings suggest that management competency has now come to be recognized as a more general capability set that incorporates digital awareness, coordination, people development and strategic judgement rather than narrow administrative competence alone.

Finding 2: Digitalization Raises the Value of Adaptive Leadership

The second result is that digitalization does not make managers less important; it makes them more important. Afzal and Panagiotopoulos (2024) found that frontline public officials have distinct responses towards digital transformation and that discretion is key in their coping process in day-to-day public service work. David et al. (2024) found that digital and communication competences have a significant impact on the future of work readiness of public managers and employees. Branderhorst and Ruijer (2025) concluded that city managers in Dutch local government require a value-based vision for digital transformation, should pay attention to legitimacy and ethical implications, and stimulate digital competencies in public servants. Together, these studies demonstrate that managers must be actively involved with shaping adaptation, legitimacy and learning during digital reform rather than announcing technical change.

Finding 3: Professional Development Works Best When It Is Systemic

The third result is that competency development works better when it is embedded in systems, as opposed to being delivered in isolated training events. OECD evidence says that competence frameworks are useful for strategic approaches to skills development as they describe the competences that civil servants need, provide a basis for indication of recruitment, support assessment, and learning opportunities. OECD also mentions that governments can use such frameworks to identify skills gaps and assess learning outcomes in a more systematic manner. Elliott et al. (2024) demonstrate how leadership development within the civil service is more effective when it is built and linked to the institutional practice rather than when treated as abstract instruction. The whole of this adds up to the fact that workplace learning, feedback, guided reflection and planning development are more consistent with the evidence than purely event-based training.

Finding 4: Uneven Digital Progress Reveals Uneven Management Capacity

The fourth finding is that digital government indicator is improving globally but management capacity is still uneven across systems. The UN E-Government Survey 2024 (United Nations, 2024) shows that the average EGDI worldwide has increased from 0.6102 in 2022 to 0.6382 in 2024. The same Survey, which covers all 193 UN Member States, shows a significant rising trend of digital government development across the world. At the same time, the UN findings make clear that the progress is not uniform, which means the development of competency cannot be the same in all the administrative settings. Higher capacity systems may concentrate more on advanced functions (digital ethics, legitimacy, data stewardship, AI-related governance, etc.), while lower capacity systems may require more emphasis on digital fundamentals, communication and supervision capability. Because digital capacity differs across public systems, stronger administrations may concentrate more on advanced governance issues, while lower-capacity systems may need to focus first on digital fundamentals, infrastructure, skills, and administrative readiness (Tveita and Hustad, 2025).

Discussion

The results of this article indicate that the development of management competences in the civil service must be viewed as a structural response to systemic change and not considered to be a limited training matter. The evidence seems to suggest that digitalization is not about introducing new tools in public administration. Rather it is transforming the nature of managerial work itself. OECD (2021) argues that digital government is based on the interaction between work environment, workforce arrangements and public-sector skills. This means that management effectiveness cannot be judged by procedural compliance, control or administrative stability anymore. It should also be judged by the ability of managers to support adaptation, coordinate across functions, and translate strategic goals into practical action (Ali et al., 2025).

A key implication of the results is that management competency is becoming wider and integrated. This is in favor of the opinion that the traditional bureaucratic profile of the public manager is too narrow for current administrative realities. Cordella et al. (2024) argue that digital skills in public sector should not be seen only as the technical operations of digital tools; instead, they should be seen as socio-technical capabilities. In the same way, Adie et al. (2024) show that digital leadership encompasses communication, collaboration and innovation in addition to digital awareness. Together, these studies indicate that management competence in the civil service is now a combination of technical understanding and relational and strategical capacity. This is important because the role of public managers is expected to keep legality and accountability, while at the same time facilitating change.

The results obtained have direct practical significance for Ukraine, which is simultaneously implementing a systemic reform of the civil service, undergoing European integration procedures and operating under martial law. In this context, the development of managerial competencies of civil servants is becoming a critical factor in institutional stability. The Ukrainian public administration system has already taken important steps towards digitalization (in particular, the “Diya” platform), but further modernization requires targeted

development of adaptive leadership competencies, strategic digital literacy and ethical judgment among managers. Given the limited resources of wartime, it is advisable to apply a "layered" approach: at the first stage, strengthening basic digital skills, communication and change management at the middle level; at the second, developing competencies in data management, digital ethics and strategic foresight for senior management. This approach is consistent with Ukraine's European integration commitments regarding public administration reform and will contribute to strengthening the state's adaptive capacity in the context of post-war reconstruction.

The findings also suggest that digitalization makes leadership more, not less, important. There is sometimes an assumption that digital systems make management more automatic – by replacing discretion with data, platforms and standardized procedures. However, the reviewed evidence indicates otherwise. Afzal and Panagiotopoulos (2024) demonstrate that public officials deal with digital transformation in different ways depending on how technology impacts their discretion and work routines. David et al. (2024) also discovered digital and communication competencies play a significant role in the adaptability of public employees to change. These findings suggest that managers continue to be central in the sense that they are the ones who interpret reform, manage uncertainty, and support staff through changing organizational conditions. In other words, technology does not eliminate the need to manage. It helps create the need for adaptive leadership.

This adaptive role is particularly important given that change in the public sector is rarely of a purely technical nature. Branderhorst and Ruijer (2025) found that digital leadership in local government requires having a value-based vision and being attentive to legitimacy and ethics. This point is especially relevant in the civil service environment because public organizations have more powerful normative expectations than private firms. A manager can be digitally adept and operationally competent, yet still be a poor manager if they cannot consider inclusion, fairness and legitimacy in decision-making processes. Therefore, the development of management competencies should not be reduced to digital literacy only. It must also contain ethical judgment, reasoning in terms of the public value, and awareness of the broader institutional consequences of reform.

Another major implication of the findings is that professional development is most successful when it is systemic. OECD (2021) explains that competence frameworks are useful as they help governments identify, assess and develop the knowledge, skills and attitudes required for digital government. This takes the focus off of isolated training sessions to a more connected capability system. Elliott et al. (2024) supports this view as they demonstrate that leadership development is stronger in the civil service if it is structured and tied into institutional practice. The practice of individual countries confirms the effectiveness of a systemic approach. For example, in the United Kingdom, the Civil Service Leadership Academy program offers modular training that combines strategic thinking, digital transformation and crisis management, and is closely linked to individual development plans. Singapore's Civil Service College integrates the competency framework into all stages of a career – from selection to promotion, using rotations, mentoring and mandatory digital modules. In Estonia, after a large-scale digital reform of public administration, mandatory advanced training of civil servants in the field of cybersecurity, data management and digital ethics was introduced, which allowed maintaining a high level of trust in electronic services. These examples demonstrate that investments in systemic professional

development of leaders are not additional costs, but a key factor in the success of digital reforms. The importance of this is obvious. If public administrations continue to rely primarily on one-off workshops, it is likely that the impact on managerial behaviour will continue to be weak. Training can increase awareness, but does not necessarily influence the way managers lead teams, make decisions, or support reform.

This discussion also emphasizes the importance of organizational incentives. Public administrations often say that they value learning, but there are not always formal systems in place to reward managers for building capability in others. Here's the need for more flexible and future-ready public employment systems. Yet in many administrations, promotion and recognition are still more strongly tied to operational delivery than they are to either staff development or innovation. This forms a practical contradiction. Managers are expected to develop people, but they may not have time, support, or an incentive to do so. For that reason, competency development should be embedded in recruitment, appraisal, promotion and leadership expectations. Without this institutional reinforcement learning is a rhetorical commitment rather than an operational reality.

This gap between the declared value of training and the real career incentives deserves deeper analysis. In many administrative systems, promotion still depends more on seniority, operational results or political loyalty than on the proven ability to develop the competencies of subordinates or introduce innovations. This asymmetry creates a systemic barrier: managers are expected to play the role of "agents of change" and mentors, but formal assessment and reward systems do not capture these functions. As a result, even well-designed competency frameworks can remain "paper" tools if they are not supported by changes in selection, certification and career planning procedures. Therefore, professional development reform must necessarily be accompanied by a review of the system of organizational incentives - in particular, by including indicators of staff development, mentoring and knowledge management in the criteria for evaluating the performance of managers.

The uneven nature of digital advancement is another problem that adds a lot of weight to the case for context-sensitive competency development. United Nations (2024) reports on global improvement in digital government indicators but also shows disparities in improvement across countries and across levels of administration. This implies that the same competency model cannot be applied everywhere in the same way. Higher-capacity systems may require more sophisticated competencies in data stewardship, in respect of digital ethics and AI governance, and lower-capacity systems may require enhanced development in digital basics, communications and supervisory capability. A layered approach is thus more realistic as opposed to a universal model. The basic principle is the same, but the priority order may vary according to the institution where one works.

The findings also indicate that human factors are key to public sector digitalization. Febiri et al. (2024) argue that public digitalization and human factors are closely related to influencing the administrative performance. Likewise, Jab et al. (2024) demonstrate how changing work arrangements in the public administration generate demands and resources for the employees. These studies support an important point: that digital transformation is far more than just a matter of systems design or technical modernization. It is also a matter of experience of change

within organizations. Managers therefore need competencies in communication, support and facilitation of learning, if reforms are to be sustained.

From the perspective of public sector innovation, the results demonstrate that innovation capacity depends not only on technological investments, but also on managerial and organizational capacity. State institutions can implement modern digital systems, but without competent managers, such reforms often remain procedural rather than transformative. Accordingly, the development of competencies should be seen as a mechanism for ensuring innovation, which enhances institutional adaptability, supports the implementation of reforms and increases the ability of authorities to create sustainable public value.

This study has a number of limitations that should be considered when interpreting its results. First, it is based on a structured narrative review of the literature, rather than primary empirical data, so the proposed generalizations require further empirical verification. Second, the review is limited to mainly English-language sources and institutional reports, which may narrow the representation of individual national contexts. Third, the work does not take into account the sectoral specificity of different government agencies, which may significantly affect the priority of certain competencies.

For further research, we suggest the following hypotheses:

1. A higher level of strategic digital literacy of government leaders is positively correlated with the success of implementing digital reforms (evaluated, for example, through the UN Online Services Index).
2. A systemic approach to professional development (integrating competency frameworks, assessment, feedback, and on-the-job training) provides a more significant increase in managerial effectiveness compared to traditional one-off training.
3. In countries with a lower level of digital maturity, prioritizing the development of basic digital and communication competencies of middle managers has a greater impact on the overall adaptability of the organization than investments in highly specialized digital skills.

Empirical testing of these hypotheses using quantitative and mixed methods would allow us to move from conceptual generalizations to evidence-based recommendations for human resource policy in the public sector.

For the practical implementation of a systemic approach to the development of managerial competencies in a state body, the following sequence of steps is recommended:

– develop or adapt a competency framework that covers strategic digital literacy, adaptive leadership, communication, ethical judgment, and the ability to develop others;

– conduct an assessment of the current level of these competencies in the management team using self-assessment methods, 360-degree feedback, and analysis of performance results;

– based on the identified gaps, form individual development plans, integrating on-the-job training, participation in interdepartmental projects, mentoring, and short-term rotations;

– embed competency development indicators into a regular cycle of performance evaluation and personnel decision-making;

– ensure constant monitoring and updating of the competency framework in accordance with changes in the external environment and strategic priorities of the government body.

This logic creates a closed loop of "framework – assessment – development – reward – review," which transforms competency management from an episodic event into a continuous organizational process.

Conclusion

The development of management competencies of civil servants has become a central condition of effective governance in periods of systemic change. Digitalization, organizational complexity, changing service expectations, and new technologies have increased the scope of what managers need to know and do. Management competence now involves strategic digital literacy, adaptive leadership, communication, collaboration, ethical judgement and the ability to develop learning in teams. The review also demonstrates that professional development is most effective when it has a systemic impact. Competency frameworks, skills assessment, feedback, work-based learning, and leadership expectations must all be working together. Where they do, digital reform is more likely to build state capacity. Where they do not, reform may have the effect of changing technologies without changing the quality of governance. Civil service modernization is not just a technology project. Public institutions require managers who are capable of learning, leading and interpreting complexity, as well as preserving public value in the face of change. That is why competency development should be regarded as a long-term strategic investment in governance itself.

The article also contributes to the research on innovation in the public sector by demonstrating that innovation in public administration depends not only on technological changes, but also on managerial competencies that ensure the implementation, coordination and sustainability of reforms. The development of adaptive, digitally oriented and lifelong learning public sector managers should be seen as an institutional innovation strategy that strengthens management capacity, improves the quality and flexibility of public services and contributes to the formation of long-term public value.

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