SERIES ON THE TRANSITION TO A KNOWLEDGE ECONOMY IN THE SULTANATE OF OMAN



WHITE PAPER 2026

The Transition to a Knowledge Economy

in the Sultanate of Oman

The First Follow-up to the 2024 Study

From Building Capability to Maximising the Benefits of Knowledge

Abbas Al-Humaid

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The Transition to a Knowledge Economy in the Sultanate of Oman

White Paper 2026 · The First Follow-up to the 2024 Study

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This paper is published by Merit Academy, an institution owned by the author that offers international professional qualifications, some of which are linked to national professional licensing pathways. The author also has a working relationship with the Sector Skills Unit for Accounting, Finance and Auditing. The paper draws on published sources and published official documents and does not promote any of the Academy's programmes. The views expressed are the author's own and do not represent any official body.

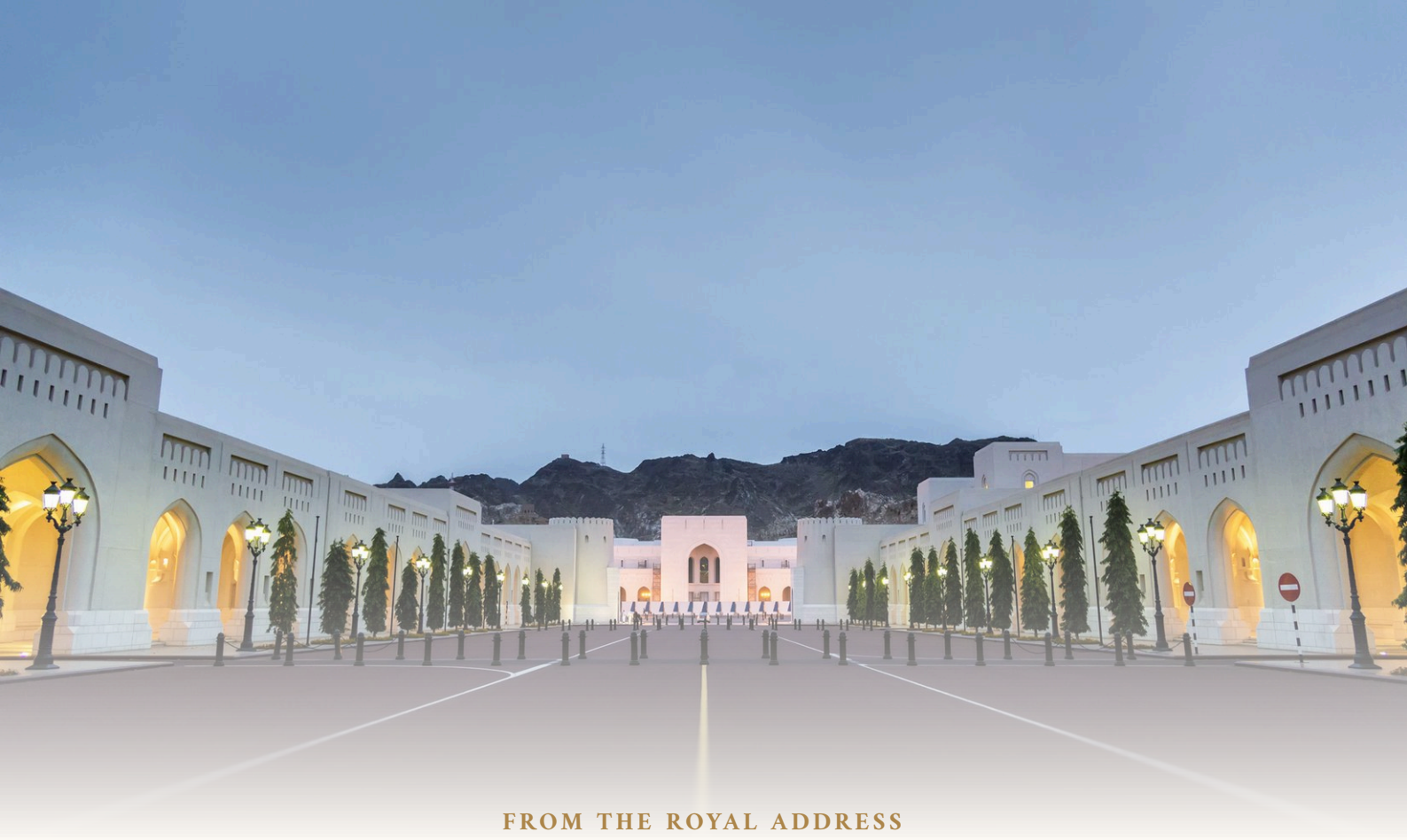
ABOUT THE SERIES

This series follows the transition to a knowledge economy every two years. Each edition returns to the same dimensions and indicators to ask: What instruments have become available? How have they been used? What outcomes have they produced?

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FROM THE ROYAL ADDRESS

"As we regard educational institutions and research and knowledge centres at all levels as the foundation of our scientific and knowledge development and the basis of our technological and industrial progress, we reaffirm our continuing commitment to empowering this sector, linking education curricula to the requirements of economic growth, and expanding opportunities for our sons and daughters. Equipped with scientific thinking and open to the broad horizons of science and knowledge, they can direct their knowledge and intellectual energies towards creativity, innovation and development, becoming the foundations of genuine investment and leaders of economic development."

From the Royal Address of His Majesty Sultan Haitham bin Tarik, may God protect and preserve him, at the opening of the first annual session of the eighth term of the Council of Oman, November 2023.

Official source

FOREWORD

Author's Foreword

This paper places Oman's people, their knowledge and their skills at the centre of economic transformation. An individual's opportunities depend on the ability of institutions, markets and the state to enable them to use and develop their knowledge. This is where education meets production: the issue examined in the 2024 study and followed up in this white paper.[1]

This is the first follow-up to the 2024 study and launches a series to be published every two years. Further editions in 2028 and 2030 will coincide with the midpoint and conclusion of the Eleventh Five-Year Development Plan. Each edition will use the same dimensions and indicators to show which laws, standards and programmes have become available, which have been used, and what benefits have reached people and organisations. This provides a comparable basis for reviewing outcomes.

The question has changed since 2024. Our concern then was to complete what had begun and build what was missing: occupational standards, sector skills units, an employment policy, and links between qualifications and work. Many of these frameworks now exist or have been approved. The question today is therefore: How do we benefit from what has been built? What prevents some of those benefits from reaching their intended users?

The paper revisits five aspects of the earlier approach: pursuing more pathways in parallel; giving greater attention to the use of knowledge alongside its development; defining the coordination function before choosing its structure; understanding how incentives shape behaviour; and replacing an estimate of aggregate returns with a multidimensional dashboard of indicators. Appendix I explains the reasons for these changes. Existing institutions remain the comparator, alongside a strategic study of establishing a National Knowledge and Digital Economy Authority and the alternative of strengthening current governance. The two options are compared on mandates, delegated authority, leadership, resources, cost and expected outcomes; creating a new body is not an end in itself.

The analysis draws on the sources and documents listed in the references and distinguishes reported information from inference and proposals. Chapter 1 sets out the author's professional activities and their relationship to some of the paper's subjects. Section 1.7 explains how the evidence base was built.

Published by Merit Academy, the paper provides a basis for discussion among researchers, practitioners and decision-makers. It supports Oman Vision 2040 and the Eleventh Five-Year Plan by examining the connections between approved programmes: How does one entity benefit from another's work? Who tracks its transition into use? The competent authorities determine which proposals merit adoption, the instruments and resources required, and the approval process.

Abbas Al-Humaid

November 2026

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WHITE PAPER 2026

Executive Summary

From Building Capability to Maximising the Benefits of Knowledge

The Central Issue

This paper follows up the 2024 study, A Proposed Strategy for the Transition to a Knowledge Economy in the Sultanate of Oman. Its purpose is to expand people's opportunities, strengthen organisations' productive capability and improve services. Its argument connects the development of knowledge, skills, research and technology with their use in organisations and markets, then tracks the benefits that reach people.[1]

The paper examines developments from 2024 to 26 October 2026. It proposes six directions and a roadmap to 2030 within the horizon of Oman Vision 2040. These directions connect to twenty-eight approved programmes led by eleven entities, with supporting links to other programmes. The eight digital economy implementation programmes sit within this broader context; they do not replace the six directions. The priority is to improve how programmes work together and measure their benefits. To lead this integration, the paper proposes studying two options: establishing a National Knowledge and Digital Economy Authority to lead national coordination of the knowledge-economy transition, or strengthening existing governance. The study determines whether assigning management of the eight digital-economy programmes and leadership of national digital transformation integration to the authority would add value, compared with keeping these functions within the existing system once strengthened. The choice is settled through a documented comparison of legal basis, resources, leadership, cost and outcomes.[2 126 128]

Figure 1 **From Building Capability to Maximising the Benefits of Knowledge**



Summarises the paper's argument; it does not assume that every outcome is an additional effect of the intervention.

Three Findings from the Evidence

1 **First, the frameworks connecting education and work have expanded.** Occupational standards and skills units have developed; qualification alignments and an employment policy have emerged; and licensing requirements have been announced for specified occupations. This represents progress in building the system and implementing some of its elements. The next step is to measure the extent to which evidence of competence informs appointment and promotion decisions, and with what effect.[3 4 7 9 10 115]

According to a published presentation by one of the units, eleven sector skills units have been licensed. More than sixty National Occupational Standard packages have been developed for levels four to ten, in sectors including energy and minerals; logistics; manufacturing; and accounting, finance and auditing. There are also more than 150 standards in the earlier format. The Ministry of Labour has approved the new packages, which are being implemented. Approval of a standard is followed by the development of assessment packages and centres, then assessment and licensing as readiness permits. Professional licensing requirements were announced in 2025 for specified occupations, subject to the scope and conditions of each announcement. For occupations covered by the Energy and Minerals Unit, 1 September 2025 was set as the date from which a licence would be required for work permits to be issued or renewed. A grace period until 1 June 2026 was subsequently announced.[5 6 115]

2 **Second, operational results accompany the expansion of instruments.** Overall performance under the Tahawul programme reached 94% by the end of 2025, and 90% of targeted services had been digitised. The report records reductions of 69% in visits, 59% in documents and 52% in processing time, alongside satisfaction of 78% across 48 institutions. These indicators have different denominators and collection methods. Subtracting satisfaction from completion to estimate a gap, or extrapolating procedural savings to the whole economy, would therefore be invalid. Nevertheless, the findings support an assessment of digitalisation that goes beyond system development alone.[11]

At the launch of the second phase of the National Digital Economy Programme on 22 October 2026, the digital economy's contribution was announced as 9% of GDP, based on a survey conducted by the National Centre for Statistics and Information in 2026. The announcement did not specify the GDP reference year or the scope of the definition. This differs from the core contribution of approximately 1.9% in 2023. The target is a direct contribution of OMR 1.5 billion in 2030. Section 3.14 presents one published result for each of the eight programmes: user satisfaction is only one of several outputs.[129 131 154]

National expenditure on research and experimental development rose from OMR 160.28 million in 2024, or 0.39% of GDP, to OMR 189.42 million in 2025, or 0.45%. In the Global Innovation Index 2026, Oman ranked 69th overall among 139 economies, 47th for inputs and 89th for outputs. These figures describe research resources and relative international positions. On their own, they do not measure how efficiently research moves into economic use or the impact of a particular policy.[13 113 150]

3 **Third, existing channels can support market development.** Local content and supplier development, the loan guarantee programme announced in 2026, and government procurement from freelancers offer opportunities to connect capability with demand and finance. Benefits become visible when a contract is delivered, payment is made and the buyer commissions further work. Some banking measures were documented before the baseline year and are therefore treated as existing instruments rather than new developments.[14 15 16 20 23]

Small and medium-sized enterprises accounted for 19.8% of supply-chain expenditure by Oman Investment Authority companies in 2024 and approximately 19.9% in 2025. This constitutes a demand base within the Authority's portfolio, although knowledge-service procurement needs to be measured separately from total procurement. Financial Circular 1/2026, issued on 10 September 2026, directs government entities to assign certain specialist work and services to independent Omani freelancers who are not employed. It sets a ceiling of OMR 5,000 for such work, in accordance with the contracting procedures guide. This is a specific channel; the knowledge-services market extends beyond it and beyond government alone.[15 116 117 16]

The importance of productive work is clear in an economy whose non-oil activity grew by 3.3% in 2024. For the same year, the International Monetary Fund reported that the share of the labour force seeking work was 3.3% overall and 12.5% among young people aged 15–24. These rates describe different aspects of the economy and labour market. Additional data are needed to establish how many people are qualified for or interested in freelance work, and to isolate the contribution of knowledge to growth.[17]

Figure 2 **Selected Figures from the Evidence**

11 **Licensed sector skills units** According to a published presentation by one of the units	**More than 60** **National Occupational Standard packages** For levels four to ten	**94%** **Overall performance of the Tahawul programme** By the end of 2025	**90%** **Of targeted services digitised** Tahawul programme
OMR 189.42 million **R&D expenditure** 0.45% of GDP in 2025	**69 of 139** **Overall rank in the Global Innovation Index** 2026 edition	**c. 19.9%** **SME share of supply-chain expenditure** Oman Investment Authority companies, 2025	**3.3%** **Growth in non-oil activity** In 2024

Figures taken from the sources cited in this summary. Their denominators, periods and definitions differ, so they are neither combined into a single indicator nor compared directly.

The evidence points to three simultaneous priorities: complete capability where it is lacking, improve its use where it exists, and measure outcomes that remain unclear. The transition of work between entities warrants separate examination. The hypothesis of "value leakage at handover points" means that an instrument completed by one entity may not be put to use by the next. It is a hypothesis to test alongside demand, finance and internal capability, rather than an allegation of institutional failure or a cause proven across the system.

For skills, we compare what standards and licensing establish with what actually informs appointment and promotion decisions, recognising the different legal provisions for the private sector and the State Administrative Apparatus. In digital government, we connect completion rates with completion of the user journey and user satisfaction. In finance, we examine enterprise readiness, the regulatory framework and bank practice together. The source published in 2022 described reductions in provisioning and risk weights, and lending reports, alongside challenges involving documentation, accounting systems and collateral. These findings define questions for testing; none alone establishes the cause of a blockage. Section 4.11 details how appointment and promotion decisions and licensing applications can be traced to identify where and why progress stalls.[18] [19] [21] [115] [11] [20]

The Six Proposed National Directions

1

Education, competence and productive use

From counting approved qualifications and standards to measuring their use in appointment and promotion decisions.

The priority is to use approved occupational standards within a framework for assessing individual competencies in appointment and promotion, where those standards cover the role and the necessary assessment capacity and legal authority are available. Appendix V provides an indicative framework for this use. Education development should continue to serve its broader purposes, while professional qualifications, recognition of prior learning and learning incentives are made available subject to eligibility.[18] [21] [22] [122]

2

Developing the knowledge-services market at home and abroad

From supporting supply to developing repeat demand from government, private, institutional and international buyers.

The priority is to connect freelancers and enterprises with repeat demand, beginning with existing institutional channels and extending to other buyers and overseas markets once their requirements have been examined. Contracts, providers and jobs should each be measured separately. Freelancing complements employment and represents one pathway within a broader market.[15] [16] [23]

3

Strengthening enterprise capability and productivity

From training detached from the enterprise to improving a specific process within it.

The priority is to link support to improvements in a specific process or product. We compare building capability internally with purchasing a knowledge service or adopting technology, and separate technical assistance from the lending decision. We then measure improvements, their persistence after support ends, and productivity where suitable data are available.[18] [23] [24]

4

Strengthening research, innovation and the transition of knowledge into use

From measuring expenditure to tracking projects that reach their users, while preserving the purposes of basic research.

The priority is to involve users in applied research from the design stage and facilitate testing, knowledge transfer and rights arrangements, beginning with existing capabilities. For basic research, we measure quality and cumulative scientific contribution. Expenditure and researcher numbers are tracked using their respective data years and definitions.[13] [83] [102]

5

Completing the enabling regulatory, financial and digital environment

From making an instrument available to facilitating access and securing its full benefit.

The priority is to identify barriers to accessing services, finance and professional practice, then compare changes to rules with improvements in their implementation. We examine the regulatory framework, bank practice and enterprise readiness together. We follow the entire user journey across entities and governorates while protecting rights and quality.[11] [20] [25]

6

National coordination, measurement and learning

From completion reports to a progress dashboard that distinguishes frameworks, use and outcomes.

The proposal rests on clear national leadership connecting knowledge and digital economy programmes. A National Knowledge and Digital Economy Authority to lead national coordination of the transition is to be studied, together with whether management of the digital-economy portfolio and integration of national digital transformation should be assigned to it, against strengthening the existing arrangement through a clear mandate and full-time leadership. Until one option is approved, the Ministry of Economy coordinates handover points within its mandate, working with the Office of the Deputy Prime Minister for Economic Affairs and the relevant entities. We assign responsibility for each transition and specify evidence of its completion, review the Plan's indicators to address gaps, and prepare a clear dossier for each initiative before approval.[26] [111]

Chapter 6 explains the basis, programmes and applications of these directions. Appendix IV identifies twenty-eight programmes for primary alignment, connects them to the eight digital programmes, and classifies fourteen proposals according to whether they require activation, expansion, instrument development or new approval. These proposals overlap with the seven overarching decisions and should not be counted as an additional, separate list.

Figure 3 **Directions, Programmes and Entities in One Framework**

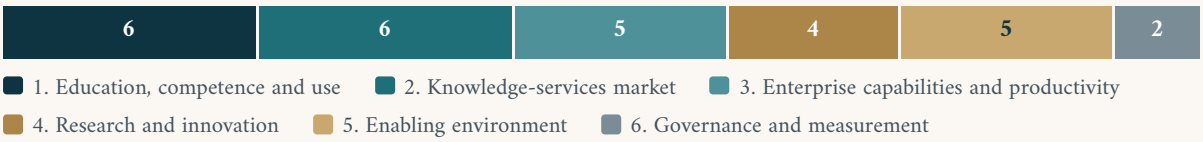
6
National directions
A proposed framework for integrated action

28
Approved programmes
Primary alignment with the Plan

11
Lead entities
For the programmes covered by the alignment

8
Digital programmes
Part of a broader knowledge context

Distribution of the twenty-eight programmes across the six directions



References [126], [128] and Appendix IV. These are linked levels of design and coordination, not separate initiatives to be added together. The distribution of programmes across the directions is calculated from Table A4–2.

Six Messages for Decision-Makers

01 **People and knowledge are the foundation of development.**
We build capability while preparing institutions and markets to use it, preserving the quality, purposes and time horizons of education and science.

02 **The response begins where the barrier lies.**
A standard does not create a buyer, a qualification does not guarantee that knowledge will be used, and finance cannot substitute for viability.

03 **Improving connections between entities is a priority.**

We test the hypothesis of "value leakage at handover points" by identifying the transition, who is responsible and the evidence of completion. This helps establish whether a barrier lies between entities, within them or in the market.

04 **The knowledge market extends beyond government contracts.**

We develop private, institutional, domestic and international demand, governed by competition, quality and rights to practise.

05 **Progress has several dimensions.**

We distinguish improvement in an indicator from completion of a system, and operation of an instrument from its impact, displaying these differences in the progress dashboard.

06 **Resources are part of the choice.**

We examine each programme's alternatives, cost and sustainability, and the requirements for approval and financing within existing plans and mandates.

Decisions Proposed for Consideration

1 Adopt the six directions as a reference framework for integrating relevant programmes in the Eleventh Five-Year Plan, and direct the preparation of a comparative study of the two institutional leadership options: establishing a National Knowledge and Digital Economy Authority, or strengthening existing governance. The study determines whether management of the eight digital-economy programmes and leadership of national digital transformation integration should be assigned to the authority, wholly or partly, and maps functions, mandates, budgets, service and data ownership, and baselines for decision time, coordination cost and programme outcomes. The legal, financial and implementation findings are presented to the competent authorities before the model is approved, in line with Section 7.2.[2] [126]

2 Commission the comparative study through the Office of the Deputy Prime Minister for Economic Affairs, with the participation of the Ministry of Economy and the competent entities. The Ministry of Economy, as the entity responsible for the Plan, continues to coordinate handover points between programmes and monitor their indicators under existing arrangements. Once an option is approved, a clear legal instrument designates the coordinating body and its functions, preserving sectoral and legal responsibilities.[26] [111]

3 Review approved programme indicators and add missing measures of use and inter-programme transitions to Plan monitoring. This should take place within the "Managing Data and Information Supporting Economic Decision-Making" programme, in coordination with the National Centre for Statistics and Information.

4 Designate a lead entity at each handover point, identifying who supplies the output, who receives it and what demonstrates its use. This includes standards and the national register; evidence of competence and employment decisions; activity licensing across entities; and fees and compliance costs. Table 7–2 identifies the proposed entities and outputs for verifying completed transitions. Any subsequent organisational decision specifies which coordination, digital-portfolio management and data functions would be assigned to the authority if it is established, without changing professional, financial or regulatory decisions without a legal basis.

5 Require a dossier for every initiative or project within the relevant programmes. It should cover the need and supporting evidence, alternatives, responsibility and authority, feasibility and fiscal implications, rights, indicators and decision thresholds, as set out in Table 7–3.

6 Begin preparatory work on the National Knowledge Economy Policy during the first work programme (2026–2027), under "Strengthening the Knowledge Economy", led by the Ministry of Education. Prepare the evidence base and development dossier so that drafting can begin during the second work programme (2028–2029). The draft should then be submitted for approval and approved measures implemented according to the authorised timetable.

7 Assign the Ministry of Labour, in coordination with the entities responsible for employment systems, to develop a national framework for assessing individual competencies in appointment and promotion. The framework should build on approved occupational standards and the Ejada system, begin with the competency component of the flexible promotion pathway, and, once approved, be tested in government occupations with complete standards during the first work programme (2026–2027), as described in Appendix V.

These are decisions proposed by the paper for consideration. Approval and financing of their applications remain the responsibility of the competent authorities. Work connecting existing capability with productive activity should begin early, alongside education and basic research. Initiatives should be prepared and tested in 2026–2027. Those demonstrating value should be expanded in 2028–2029, with overall results reviewed in 2030. This sequence specifies the nature and timing of work. Spending allocations and approvals are determined through the appropriate approval process.

What Will the 2028 Follow-up Measure?

1. Have occupational standards informed appointment and promotion decisions, and in which sectors? Has the relationship between certificates of competence and the Oman Qualifications Framework been resolved, including the conditions for registration or linkage to the framework?
2. Have digital journeys been completed with less time, cost and effort, and greater satisfaction? What outcomes have the eight digital programmes achieved against their respective purposes?
3. How many knowledge-service contracts have been fulfilled and paid for, how many have led to repeat business, and who has benefited?
4. How many enterprises continued improving a process after support ended?
5. What is the share of Omanis in knowledge-intensive jobs, and how has it changed?
6. How many applied research projects have reached an actual user?
7. How many handover points have a designated owner and a published measure? In how many has it been verified that the transition of work was completed and its outputs were used?

Table 8–2a defines the indicator for each question, its proposed data source and the status of its baseline. These questions complement the eleven-dimension dashboard and the register of sixteen recommendations. The 2028 edition will therefore combine monitoring of the overall transition with examination of specific handovers.

Preparation of the paper did not include field surveys, new interviews or market testing. Implementation arrangements are therefore presented as proposals requiring verification during programme development and are distinguished from facts established by the sources.

READER'S GUIDE

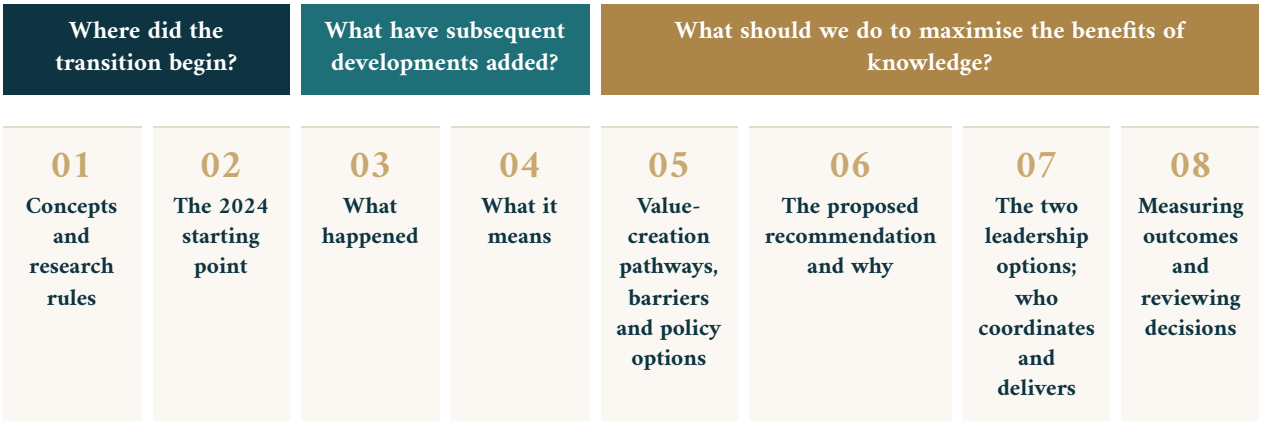
Reading Guide and Cross-References

The paper answers three questions: Where did the transition begin? What have subsequent developments added? What should we do to maximise the benefits of knowledge? Reading the chapters in order allows readers to follow the full argument. Readers may instead begin with the Executive Summary and Chapter 6 for the proposed directions and decisions, then return to the evidence and details of governance and measurement.

How the Chapters Connect

Chapter 1 establishes the concepts and research rules, and Chapter 2 sets the 2024 baseline. Chapter 3 documents developments, and Chapter 4 examines their significance. On this basis, Chapter 5 presents pathways to value creation, their barriers and policy options. Chapter 6 states the proposed recommendations and their rationale; Chapter 7 compares the two institutional leadership options and identifies coordination and delivery responsibilities in the current phase. Chapter 8 connects this work to measuring outcomes and revisiting decisions.

Figure 4 **The Paper's Three Questions and the Sequence of Its Chapters**



Reading guide. Read in order, the chapters follow the paper's full argument; readers may instead begin with the Executive Summary and Chapter 6.

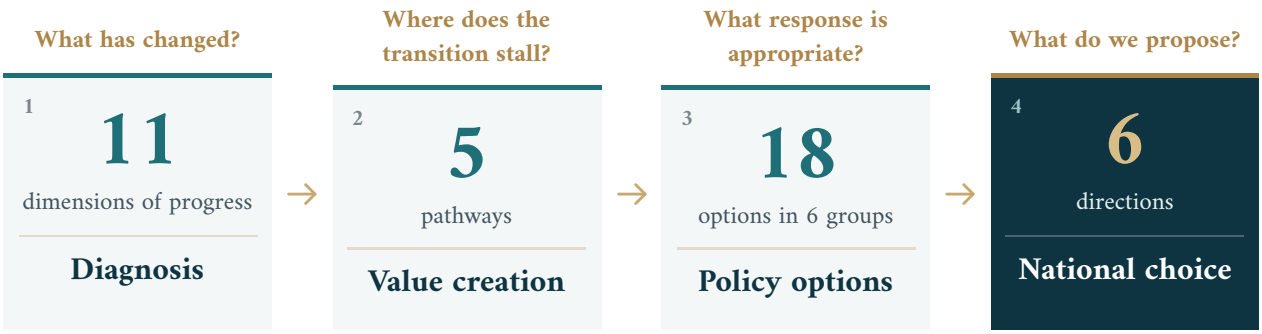
From Diagnosis to Recommendations

Question	Purpose of the analytical framework	Location
What has changed?	Eight fields organise the diagnosis, and eleven dimensions make up the progress dashboard.	Chapter 4
Where does the transition stall?	Five value-creation pathways track the transition from capability to use and outcomes.	Chapter 5

Question	Purpose of the analytical framework	Location
What options are available?	Six groups contain eighteen options; each programme selects those that address its needs.	Chapter 5 and Appendix III
What do we propose nationally?	Six directions bring together choices for action, followed by governance, a roadmap and measurement.	Chapters 6–8

Each framework serves a different purpose, which explains the different counts. A dimension measures an aspect of the situation; a pathway explains how knowledge becomes value. An option offers a response, while a direction brings priorities together. One option may serve several directions, so we track these connections and count each shared outcome or resource only once. We do not assume a one-to-one relationship between the frameworks.

Figure 5 **From Diagnosis to Recommendations**



The counts describe different analytical functions. They are not in one-to-one correspondence, and overlapping outcomes are not added together.

Timeframes for Comparison and Measurement

The historical comparison point is 2024, and the evidence cut-off for this update is 26 October 2026. Each data item is presented with its reference year and definition. When a new application is developed, a baseline is set at the start of implementation, together with a reference scenario describing what is expected without the proposed addition. Implementation periods begin on approval, not when the paper is written.

Appendices and References

Superscript numbers in the text and bracketed numbers in tables refer to the reference list. Appendix I records statistical corrections and changes in the argument since 2024; Appendix II follows up the sixteen recommendations; and Appendix III brings together policy options and tools for design and measurement. Appendix IV connects the directions to the Plan's programmes, the eight digital programmes and the relevant entities. Appendix V provides an indicative framework for assessing individual competencies. Instrument codes support traceability; they do not imply that programmes already exist or indicate priority rankings.

For a summary of progress, see Section 4.12. For the proposed decisions, see Section 6.11. Calculation and classification rules appear in Part E of Appendix III. Section 1.10 and Appendix IV explain the paper's relationship to Oman Vision 2040 and the Eleventh Five-Year Plan.

Terms Used in This Paper

Instrument	Something the state issues or develops to achieve a purpose, such as a law, standard, qualification, financing programme, platform or service.
Use	An instrument becoming part of an actual decision or activity, such as appointment, promotion, contracting, production or service delivery.
Outcome	A change observed after an instrument is used, such as improved quality, productivity, income, innovation or service access. Establishing that the instrument caused the change requires an evaluation appropriate to the intervention.
Handover point	The point at which work passes from one entity to another, or between strategic programmes. An example is the transition of an occupational standard from the standards programme into use in a promotion decision under the Ejada system.
Value leakage	An analytical description of the hypothesis that some of an instrument's benefits are lost when work passes to another entity or programme. Unclear responsibility for bringing it into use may be one cause. The hypothesis is tested by tracing cases, rather than treated as a proven cause across the system.
Progress dashboard	A set of indicators with consistent dimensions, updated in each follow-up. It distinguishes frameworks, use and outcomes without combining them into a single number.
Programme dossier	The document prepared before approving an initiative or project under the directions, setting out its need, alternatives, feasibility, rights and indicators.
Decision thresholds	Limits agreed in advance that determine whether a programme continues, is modified or stops, depending on whether they are met.
Reference scenario	What is expected to happen without the new instrument. Its impact is measured against this scenario.
Integration package	Connecting existing strategic programmes in the Plan, assigning responsibility for work passing between them and measuring the use of their outputs, instead of creating a new programme.



01

CHAPTER 1

The Knowledge Economy in the Sultanate of Oman

Strategic Framework, Purpose and Methodology

IN THIS CHAPTER

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1.1 Continuing the Transition and Deepening Implementation

The 2024 study, A Proposed Strategy for the Transition to a Knowledge Economy in the Sultanate of Oman, examined how to expand the role of people, their knowledge and their skills in economic development. It addressed five complementary fields: academic and professional education, research and development, technology, the institutional environment and professional services. It proposed a sequence of priorities that allowed some pathways to proceed together and to be reviewed as circumstances changed.[1]

This paper continues that inquiry in eight chapters. We begin with what already existed and what has changed, then examine the capabilities and relationships that help turn knowledge into value. We use this foundation to compare policy options and propose national directions and priorities, connect them to a governance framework and roadmap, and explain how outcomes should be measured. The aim is to help understand and guide the transition and provide a clear basis for public and institutional discussion.

The Eleventh Five-Year Development Plan, 2026–2030, provides a suitable context for this inquiry. As the second implementation plan for Oman Vision 2040, it connects diversification and competitiveness with sustainability, social development, labour-market efficiency and institutional performance. The paper's proposals are offered within that framework as a contribution to developing its options and making better use of it. Appendix IV connects each direction to approved programmes and their responsible entities. Section 1.10 explains the relationship between the Vision and the Plan.[2]

The instruments organising the relationship between education, training, occupational standards and employment have become clearer. How do these new connections work? What still needs to be built? Issuing an instrument is a step towards addressing a gap; monitoring reveals the extent of its benefit. Where published data on an entity's work are unavailable, we await evidence before reaching a judgement. Absence of data does not establish absence of activity.[3] [4] [7]

The central question is: How can the Sultanate of Oman expand its ability to produce, acquire and use knowledge? How can it turn that capability into productive employment, more efficient enterprises, and higher-value solutions, services and products?

Needs vary across sectors and groups. We may need to build basic capability, improve the use of available capability, or strengthen the relationship between researchers and users or service providers and clients. We first identify the need, then select the instrument and size the intervention to suit the evidence and resources.

> *Absence of data does not establish absence of activity.*

1.2 The National Purpose and the Value Sought

The purpose is to identify practical options that increase the contribution of knowledge, competence and innovation to diversifying Oman's economy, raising productivity and improving citizens' opportunities. We seek sustainable income and quality work, enterprises better able to produce and compete, and more effective public services. This purpose is fully realised when the benefits of resources and opportunities are more widely shared across governorates and population groups, reaching individuals, enterprises and society.

Achieving this requires building knowledge and the ability to perform, enabling people to demonstrate that ability where necessary, and providing opportunities to use it in an organisation, market or public service. A skills framework helps distinguish skills development from skills use and organise the relationship between them. Basic research and general education have broader purposes and longer time horizons; their value extends beyond performing an immediate occupational task.[27] [1]

1.3 What Do We Mean by a Knowledge Economy?

The concept of a knowledge economy connects the production of knowledge and information with their dissemination and use. Here it means an economy with an expanding, organised capability to apply knowledge, skills, research and technology to improve production and services and develop new solutions. This definition sets the scope of the inquiry, while sectoral statistical classifications continue to follow their national frameworks. The digital economy is both a component and an enabler of this transition; it does not encompass its entire scope.[28]

This includes the use of knowledge in industry, tourism, agriculture and services, alongside activities that produce knowledge or provide knowledge services directly. In each case, we ask: What work is required? What knowledge does it need? How is that knowledge used? What value does it add? Understood this way, the knowledge economy extends beyond technology sectors.

Three levels should be distinguished in the National Digital Economy Programme 2026–2030: three strategic pillars—digital government, digital sectors and businesses, and digital society; four enabling foundations—advanced and secure digital infrastructure, development of digital policies and governance, development of talent and digital skills, and innovation and the development of digital industries; and eight implementation programmes presented in Section 3.14. The six directions and eleven-dimension dashboard in this paper remain tools for analysing the broader knowledge economy.[128]

Table 1–1 **Concepts Used in the Paper**

Concept	Working definition
Knowledge economy and digital economy	The knowledge economy includes the production, dissemination and use of knowledge across activities. Digital technologies and data overlap with it but do not cover all its fields. [28]
Qualification and national framework	A qualification is an outcome of learning and assessment that meets quality-assurance requirements. The framework specifies the level and volume of learning. Listing or aligning a qualification differs from academic degree equivalency and from a licence to practise. [29] [22]
Occupational standard	A reference describing the performance, knowledge and skills required in an occupation or occupational role. It is used in education, assessment and practice within its approved scope. [4]
Competence and occupational assessment	Competence is the ability to perform work in its context. Assessment gathers evidence of that ability. Checking the capability required for a task may remain necessary even when a person holds a qualification or has accrued seniority.
Licensing and recognition of experience	Licensing is permission to practise where required by the applicable system. Recognition of experience or prior learning has different purposes and conditions and does not automatically confer a qualification, promotion or licence. [30] [18] [31]
Professional education and productive use	Professional education is learning directed towards practice. Productive use means applying capability in work or a service that produces an outcome. An experienced person may have a greater need to demonstrate or use their competence than to undertake further training.
Innovation	A product or process that is new or significantly improved for the unit concerned and has been made available to users or brought into use. Innovation therefore differs from an idea or research expenditure alone. [32]
Knowledge services	In this paper, services whose value rests primarily on knowledge or specialist expertise, such as accounting, consulting, programming, design and specialist training. They are supplied by freelancers, enterprises and specialist firms. Their measurement scope is determined by approved statistical classifications. Independent knowledge services are provided through an independent contractual relationship; they are a pathway within the knowledge economy, not a synonym for it.

1.4 Levels of Analysis and Time Horizons

The transition is analysed at four interconnected levels. It begins with individuals: their learning, skills, participation and opportunities to work using their knowledge. We then examine the enterprise, its management, processes, technology and ability to adopt solutions. At sector and market level, we assess demand, competition, contracting and value chains. The national ecosystem brings these relationships together through its rules, finance, institutions, and flows of knowledge and data. At every level, we consider differences across governorates and groups as far as the evidence allows.

Figure 6 **Four Interconnected Levels for Analysing the Transition**



At every level, we consider differences across governorates and groups as far as the evidence allows.

Section 1.4. Connections between the levels are tracked; none is read in isolation from the others.

We also track connections between these levels. How does an economic need become a standard or programme? How does learning or experience become demonstrated competence and then lead to practice for which there is demand? We likewise follow research reaching its user and data informing decisions. These relationships help us understand the pathway, but they do not impose identical procedures on every occupation or type of research. A pathway may begin with existing experience, and an occupation may not require licensing at all.

This distinction helps clarify institutional responsibility for outcomes. Workers operate within organisations, where management, resources and technology affect their capability. The World Bank has highlighted the role of managerial skills and organisational practices in building innovation capability. Labour productivity is also affected by capital, technology, organisation and other inputs; it does not reflect workers' effort alone.[33] [34]

The year 2024 is the starting point for comparison. Earlier years are reviewed when they help explain the historical trajectory, as with UNCTAD's 2014 review of science, technology and innovation policy in Oman. Such sources help establish the background and persistent questions, rather than describe the current situation.[35]

This update uses 26 October 2026 as its evidence cut-off, considers implementation up to 2030, and retains the 2040 horizon for longer-term transformations. Each data item is attributed to the year it describes, even if published later. The Global Innovation Index 2026 has been included in the current comparison, while retaining the 2024 and 2025 edition data and the limits of comparability between them.[150]

1.5 The Decision Questions Guiding the Research

The paper's questions progress from describing what happened to choosing what should be done. We begin with what existed in the baseline year, then track changes in instruments, implementation and outcomes. This comparison shows where progress has emerged, where the picture is mixed and where evidence is missing.

We then identify the barrier. Capability itself may be lacking, or difficult to describe and demonstrate. Conditions for practice or weak demand may impede its use, or an organisation may lack the ability to apply it well. Distinguishing these situations is the basis for selecting a response.

From there, we move to the alternatives. What would address the barrier or unlock the opportunity? When is improving an existing instrument sufficient, rather than creating another? We identify what justifies state intervention or coordination between institutions and what the private sector can undertake. We then compare options by expected value and feasibility of implementation, examining the resources, responsibilities, data and prerequisites for each.

A recommendation is a national direction with a defined purpose and a justified priority. Before proposing a new instrument, we examine whether an existing one can be improved, completed or connected to others. The competent authorities then translate the directions into policies and programmes with defined responsibilities, targets and financing.

1.6 The Reference Methodology and Its Sequence

The paper's methodology combines understanding the situation with designing a response, grounded in evidence and public value. It allows implementation to be reviewed when monitoring reveals new information. It comprises five interconnected tasks: examining history and developments, diagnosing the ecosystem, explaining how impact occurs, comparing options, and designing operations and measurement.

The methodology draws on international frameworks to organise analysis and design, adapted to the research question. Drawing on these references does not imply that the organisations that developed them endorse this paper.

Figure 7 **The Seven Stages of the Reference Methodology**

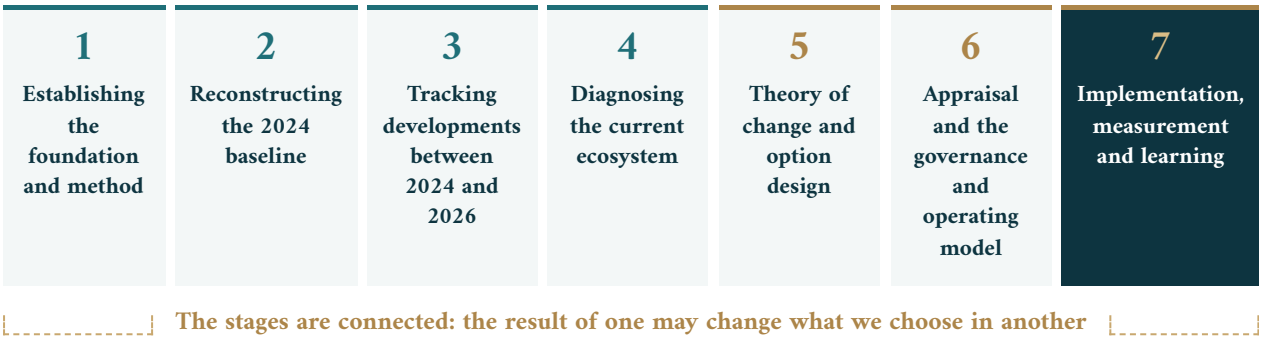


Table 1–2 details the work required at each stage and its output.

Table 1–2 **The Seven Stages of the Reference Methodology**

Stage	Required work and output
1. Establishing the foundation and method	Define the scope, concepts, decision questions and criteria for accepting evidence. The outputs are a research protocol and source register.
2. Reconstructing the 2024 baseline	Document the foundations, capabilities, policies and indicators to establish a reference picture suitable for comparison.
3. Tracking developments between 2024 and 2026	Distinguish issuance of an instrument from its readiness, use and outcomes. The output is a developments register specifying dates and scope.
4. Diagnosing the current ecosystem	Examine capabilities, connections, incentives and demand. Prepare a dashboard showing the direction of change, implementation stage and strength of evidence, with a summary of opportunities and constraints.
5. Theory of change and option design	Explain how impact occurs and compare policy instruments and their assumptions to formulate implementable, testable options.
6. Appraisal and the governance and operating model	Prioritise national directions and define work requirements and roles. The output is a set of priorities guiding programme preparation, without costing the programmes.
7. Implementation, measurement and learning	Define the roadmap and monitoring and evaluation rules for the competent authorities to use when developing and reviewing applications.

The stages are connected: findings at one stage may change choices at another. Examining demand or cost may reshape an option, while new evidence may alter the diagnosis. Measurement design therefore begins alongside intervention design and is detailed in Chapter 8. Proposed implementation and field trials begin after approval, provision of resources and documentation of their methods.

The diagnosis draws on UNCTAD's framework and the skills approach. Appraisal examines five dimensions of the investment case: strategic justification, economic viability, commercial arrangements, financial affordability and delivery management. Smart specialisation, iterative adaptation and foresight help identify opportunities and test options; the mission model helps design how programmes will operate. The next section explains what the paper has actually undertaken within these reference frameworks.[27] [37] [38] [39] [40] [41] [42]

1.7 Building the Evidence Base and Ensuring Comparability

Sources are assessed according to the question they answer. Legislation establishes a rule and its scope; administrative data describe operations; a survey conveys the experience of the population it covers; and an appropriate evaluation helps investigate impact. Reported information is separated from derived calculations, interpretation and proposals. News reports originating from the same source count as one piece of evidence, however many channels reproduce them.

For every decision-relevant figure, we document its definition, unit, population, period, source and location within that source. We distinguish the event date from the data reference period and the dates of publication, entry into force and access. Where an indicator's definition, coverage or calculation changes, the limits of comparison are stated. Similar names alone do not justify a time series.

Comparisons over time distinguish real change from changes arising from updated data, coverage or documentation. They separate what was published when the 2024 study was prepared from later information about the same period and from subsequent developments. Any revision to a definition or source that affects comparability is explained where it occurs.

We assess progress through three independent lenses: the direction of change since the baseline year, the documented implementation stage, and the strength of evidence supporting the judgement. A law may be issued, followed by operational capability, use and an outcome in which the intervention's impact can be investigated. One stage may advance while data on the next remain unavailable. In that case, we record the measurement gap as such; we do not treat it as regression or call a launch a final outcome.

Preparation involved checking documents, comparing published sources and attached documents, rechecking published calculations and analysing the findings. It did not include new interviews with entities, surveys or market tests. Verifying the suitability of implementation arrangements therefore remains part of programme preparation.

Judgements are based on published sources and official documents included in the review materials. The reference list identifies their type and available publication details. An official news item is sufficient to establish that an entity announced the launch of an instrument or the start of implementation within its stated scope. The dashboard therefore records "launch announced" or "implementation start announced", as appropriate. Binding provisions and their details require the approved text. Completion, outcomes and impact each require separate evidence. The date a document became available for review is not treated as its approval or effective date, and multiple copies of one original are not independent evidence.

Assessing Progress without an Artificial Percentage

The Chapter 4 dashboard brings together substantive dimensions of the transition and cites national and international indicators within them. Where definitions and periods are comparable, we show numerical change; where numerical comparison is impossible, we provide a reasoned description. Indicators thus remain evidence about these dimensions, rather than additional dimensions that double-count the same aspect.

Implementation stages are ordered descriptions, not numerical scores. We therefore do not convert them into percentages such as 20%, 40% and 60%, or derive a national completion rate from them. Appendix III sets out the classification and calculation rules, while judgements remain open to revision as evidence changes.

Correct Calculation and Valid Inference

Calculation checks examine formulas, totals, units and denominators, and prevent double-counting. We also assess whether the calculation fits the question: an arithmetic operation may be correct without supporting the conclusion attributed to it. This distinction follows UK guidance on assuring analytical quality.[43]

Economic estimation distinguishes revenue, output value, value added, net income and cash flow. Value added is output value less intermediate consumption; it is not invariably revenue or net income. To estimate additional impact, we ask what would happen if existing programmes and arrangements continued without the new intervention. This requires a reference scenario: a forward-looking path distinct from the historical picture in 2024.[44] [38]

1.8 From Analysis to Priorities and the Operating Model

Before favouring a direction or instrument, we define the problem, intended outcome and conditions for achieving it, then compare alternatives. We use this basis to rank national priorities by the importance of the need, strength of evidence and implementation requirements. When a direction is developed into a specific application, the competent authorities prepare the detailed comparison of delivery proposals and programme budgets.

Appraisal considers the importance of the problem, the strength of evidence for a remedy, and the option's readiness and requirements. An option may be ready for a minor issue while a major national issue requires additional capability or evidence. Readiness alone does not give the former priority; we prioritise the work needed to address the latter. The progress dashboard shows what has been established and what remains in each dimension, with detailed economic appraisal completed during programme preparation.[38] [45]

The evidence required varies by intervention stage. A limited pilot needs a rationale for testing; expansion requires stronger evidence of effectiveness, capability and sustainability. Intended outcomes also vary. Education, basic research and public services can create value without a direct commercial buyer. The need, user, public outcome and financing should therefore be defined to suit the mission.

We use three models to design the work, each with a distinct purpose. The national ecosystem map shows relationships, rules and value flows. The public programme operating model specifies beneficiaries, roles, processes, resources and accountability. The commercial service business model examines customers, the offer, channels, revenues and costs. In every model, we distinguish the beneficiary, user, buyer, funder and regulator: different entities may perform these roles. The mission model supports this adaptation alongside feasibility analysis and evaluation.[39]

1.9 Intended Output and Limits of the Assessment

The paper moves from describing and diagnosing the situation to policy options and the six directions. The intended output is a reasoned basis for discussion and decision-making that combines foundational investment, better use of capabilities and development of the enabling environment.

Implementation monitoring is distinct from evaluating outcomes and impact. Every indicator needs a definition, baseline, period and data source; every intervention needs an evaluation method suited to it and to the comparisons available. Integrating evaluation from the outset, as recommended by the UK evaluation handbook, supports learning during delivery. What we learn allows us to adjust the design as evidence or circumstances change.[46] [41]

The analysis offers a reasoned strategic perspective for publication and discussion that can support subsequent institutional study. It distinguishes directions supported by evidence from matters requiring specialist analysis before implementation. An inventory of all sectoral opportunities and determination of the optimal allocation of the national budget lie outside its scope. The end of Chapter 6 explains how the recommendations are put forward.

Professional Disclosure and Independent Appraisal

The author's activities in consulting and professional education overlap with some subjects in this paper. He also has a direct working relationship with the Sector Skills Unit for Accounting, Finance and Auditing, whose published materials are used in Section 3.4. Recommendations are advanced in the public interest without favouring particular instruments or providers. They do not allocate work to the author's institutions or restrict training and development provision to them. Any subsequent application requires disclosure of interests, fair competition and independent assessment of competence, quality and impact.

The paper is published by Merit Academy, which the author owns and which offers international professional qualifications, some linked to national professional licensing pathways. It does not promote any of the Academy's programmes. The views reflect the author's assessment and do not represent any official body.

People remain central to the inquiry. How do we help them learn and participate? How do institutions and markets enable them to work using their knowledge and competence? These questions begin the analysis of change, clarify what needs development or connection, and guide the choice of action with clear accountability for its outcomes.

To identify the next step, we return to the foundations of the transition and the situation in 2024, then examine what subsequent developments added. This comparison distinguishes existing capability whose use needs improvement, capability not yet complete, and situations requiring a different response.

1.10 The Paper's Place within Oman Vision 2040 and the Eleventh Five-Year Plan

The paper works within the existing national framework. Three levels clarify its place. Oman Vision 2040 defines twelve priorities, strategic directions and objectives. The Eleventh Five-Year Plan 2026–2030 contains 190 strategic programmes linked to seventy-five Vision objectives, distributed across work programmes for 2026–2027, 2028–2029 and 2030. Within this framework, the paper proposes improving connections between programmes and measuring the benefits derived from them.[126] [127]

Table 1–3 **The Relationship between the Vision, the Plan and the Paper**

Level	What it defines	Example related to the knowledge economy
Oman Vision 2040	Priority, strategic direction and objective.	The labour market and employment priority, and the objective of "an employment, training, promotion and incentives system based on competence and productivity".
Eleventh Five-Year Plan	The strategic programme, responsible entity and work programme.	"Applying Occupational Standards in Economic Sectors" (7-2) and "Developing the Ejada System" (12-4), both led by the Ministry of Labour.
This paper	Work passing between programmes and measurement of use.	Using an approved standard in a promotion decision and measuring how many decisions relied on it.

The integration and measurement package brings together twenty-eight approved programmes led by eleven entities, as shown in Table A4–2. This is the primary alignment scope. Supporting links in Chapter 6 to other programmes—including 1-8, 1-17, 6-3, 6-1, 5-7 and 9-18—show how the work extends beyond that scope and remain separate from the core programme count.[126]

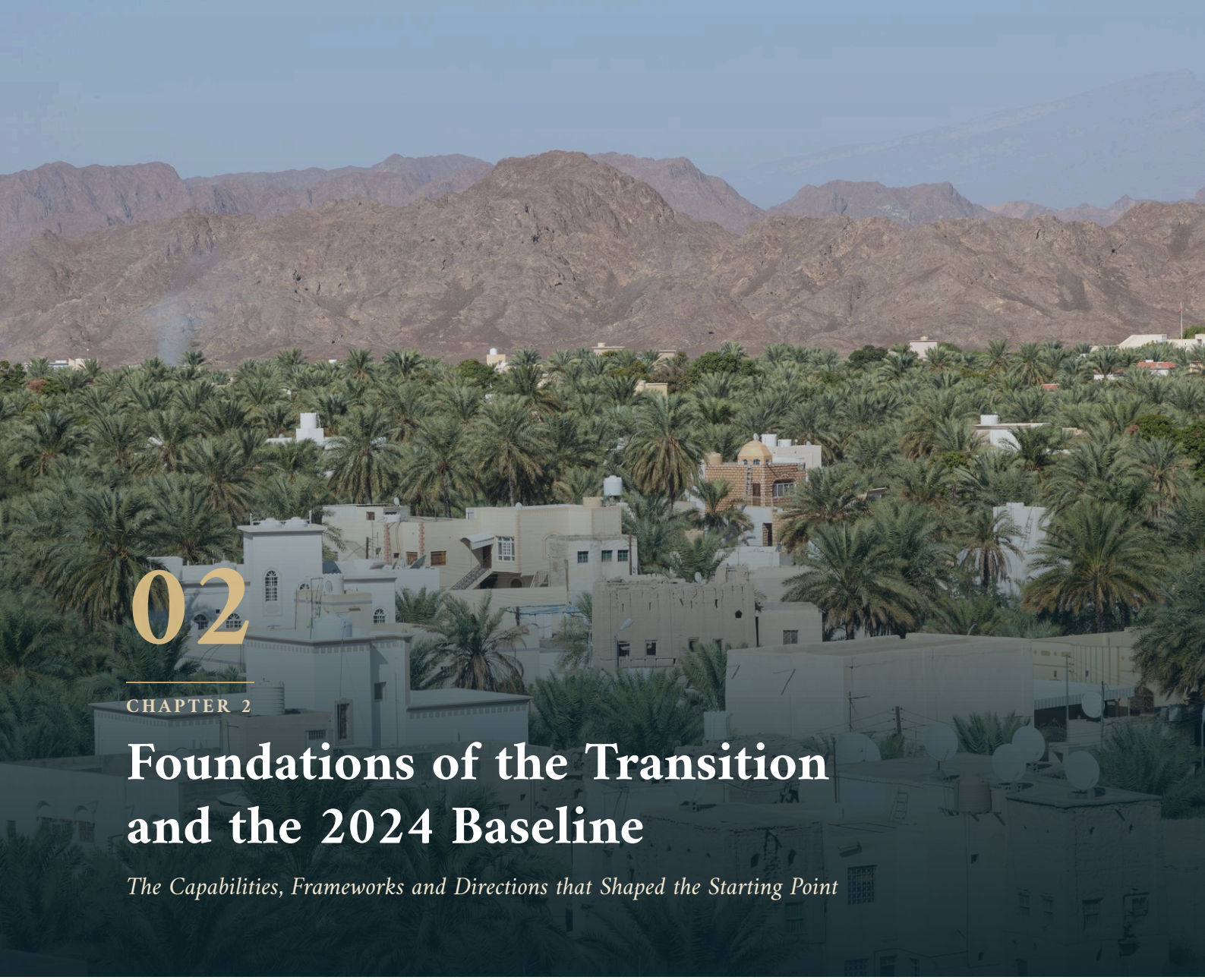
One of the programmes closest to the paper's subject is "Strengthening the Knowledge Economy" (1-13), led by the Ministry of Education. It begins with developing and implementing the National Knowledge Economy Policy in the second work programme, 2028–2029. This paper provides material that can inform preparation. Its publication cycle aligns with the Plan: the 2026 edition falls within the first work programme, the 2028 edition marks the transition to the second, and the 2030 edition accompanies the Plan's conclusion.[126]

The Plan volume identifies responsible and supporting entities but does not present inter-entity handovers or programme indicators in sufficient detail for this analysis, although the methodology refers to indicator development. The approved arrangements and indicators must therefore be examined before gaps are addressed;

their absence from the volume does not establish that they do not exist. Digital-sector documents also include pathways to external markets. The proposed addition is to connect these with broader knowledge services and identify any gaps that are verified.[126] [128] [137] [141]

The Plan governs the allocation of responsibilities. It assigns "Strengthening the Knowledge Economy" to the Ministry of Education, which leads policy development as the Plan specifies. Programmes remain assigned to their lead entities in the Plan until a competent decision provides otherwise. Chapter 7 examines an institutional option for leading integration, a National Knowledge and Digital Economy Authority, against strengthening existing governance. Neither option automatically transfers the Ministry of Education's responsibility for preparing the National Knowledge Economy Policy under programme 1-13.[126]

Decisions are presented at two overlapping levels: seven overarching decisions in Section 6.11 and fourteen detailed proposals in Table A4–3. The proposals range from activation and expansion to instrument development and approval, beginning with a review of existing arrangements. Every action and its financing remain subject to feasibility and the required approvals. The leadership model is to be settled by comparing the two options in Section 7.2.



02

CHAPTER 2

Foundations of the Transition and the 2024 Baseline

The Capabilities, Frameworks and Directions that Shaped the Starting Point

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2.1 The Starting Point: Expanding the Role of People and Knowledge in Development

The 2024 study focused on what people can add to Oman's economy through their knowledge and skills and the opportunities this creates for work, competitiveness and diversification. It examined education, research, technology, professional services and creative industries as complementary fields. It considered freelance work within them, alongside production in institutions, companies and universities.[1]

Understanding change first requires knowing where we began. This chapter therefore brings together the study's directions and the frameworks in place when it was prepared, presenting selected baseline indicators. Chapter 3 examines developments against this picture. We then consider individuals' and organisations' current capacity to use knowledge and the interventions suited to their needs.

The baseline has two complementary levels. The strategic level sets out the priorities proposed by the study; the descriptive level documents instruments and capabilities as reported in their sources. Comparisons distinguish a study recommendation from an implemented government measure, and the existence of an entity or programme from its achieved impact. Each has a different meaning when assessing progress.

Years before 2024 are reviewed where needed to establish the starting point, with observation and publication years stated. Where a later source documents an earlier event, the event date remains explicit. Programme results are attributed to the years covered; older educational and research observations are not presented as measurements conducted in 2024.

The chapter's question is: What foundations, capabilities and frameworks underpinned the transition in 2024, and what should we track to determine how far they have developed?

2.2 A National Framework Connecting Knowledge with Diversification and Productivity

The 2024 study began from an existing national direction and connected its proposals to Oman Vision 2040 in education, research, national capabilities and economic diversification. The Tenth Five-Year Development Plan 2021–2025 was the Vision's first implementation plan. The practical question was therefore how to contribute to implementing this direction and organise the fields of work that would deepen it.[1: 19–20 110]

The Tenth Plan helps explain this context. It addresses stimulating labour demand and developing skills to meet it, linking labour-market policies with economic and productivity policies. It considers empowering the private sector, removing barriers to its activity, providing finance and developing instruments to support SMEs. We treat these directions as part of the starting framework and distinguish them from implementation outcomes.[110: 55, 111, 117]

Connecting the two requires deliberate work; progress in one does not guarantee progress in the other.

The knowledge transition therefore concerns the productive base itself. How do we produce better, improve management and specialist services, and connect research with application? This work encompasses existing sectors and new activities through learning, problem-solving and developing products and services. This is an analytical interpretation of the relationship between knowledge and growth; sectoral statistical classifications continue to follow their approved frameworks.

We therefore seek to expand people's opportunities and enable organisations to create value through people's knowledge. We track skills development and the working and investment environment that allows people to apply what they have learned. Connecting the two requires deliberate work; progress in one does not guarantee progress in the other.

2.3 People and Learning: The Foundation and the Long-Term Horizon

The study prioritised professional education and skills development alongside developing school and academic education. It called for an early start on school education because improvement takes time and its effects emerge over the long term. Recommendations covered teachers, curricula, teaching methods, assessment and lifelong learning. They combined building future generations' capabilities with improving near-term opportunities for workers and jobseekers.[1: 209–210, 262–286]

Oman's Human Capital Index 2020 profile provides part of this picture. The index stood at 0.61; expected years of schooling were 12.8, compared with 8.6 learning-adjusted years. The index estimates the human capital a child born at that time could expect to acquire by age eighteen. It uses pre-pandemic health and education conditions against a benchmark of complete education and full health. It describes those conditions and expectations; it does not directly measure an adult worker's skills in 2024.[51: 1]

This difference directs attention to what students actually learn, alongside the years they spend in school. The years are adjusted for learning; the gap between the two figures does not represent years of repetition or dropout. We therefore supplement the picture with evidence closer to performance: What can a graduate accomplish, and how much of what they have learned do they use at work?

For subject specialisation, Oman's Global Innovation Index 2024 profile reports that science and engineering graduates accounted for 39.47% of all tertiary graduates, using 2021 data. The figure describes the distribution of graduates by discipline. Whether supply is sufficient in a narrow specialism or at a particular experience level requires labour-market data. We therefore track specialisation, quality and knowledge use together.[52: 8]

Recognition of practical experience already had a basis in study regulations. The 2015 regulation on recognising non-Omani institutions and the equivalency of their qualifications addressed study conditions for experienced applicants. The Higher Education Law of 2023 subsequently provided for the possibility of admission with recognition of prior experience under specified conditions. Further detail introduced in 2026 is therefore treated as development of an existing pathway, rather than Oman's first recognition of experience.[47] [30]

2.4 The Digital Environment: Capability Whose Economic Use Can Expand

Digital transformation was already under way when the study was prepared. The Ministry's statement on digital economy achievements confirms the launch of the National Digital Economy Programme in 2021. It is used here to establish the launch date; results for 2021–2025 remain within their own period, separate from the baseline-year picture.[48]

In the ICT Development Index 2024, Oman scored 91.7 out of 100. The International Telecommunication Union identifies 2022 as the edition's reference period, using 2021 data or estimates where necessary. This composite score combines aspects of connectivity. It does not mean that 91.7% of residents have all dimensions of the service, nor does it measure returns from its use within enterprises.[53: 3, 5, 17]

For e-government, the Ministry's presentation of its 2025 plan reported Oman's ranking as 41st globally in the E-Government Development Index 2024. The ranking describes Oman's position in the index as reported by the government entity. We complement this picture by tracking how service development affects transaction time, cost, quality and completion where more than one entity is involved.[49]

In September 2024, the Ministry announced the National Programme for Artificial Intelligence and Advanced Digital Technologies 2024–2026, building on the executive programme launched in 2022. Its objectives included applying these technologies in economic and development sectors, localising them and establishing human-centred governance. We record these as objectives announced in the baseline year, then follow initiative implementation and impact.[50]

What do we seek from digital capability? Its value becomes clear when users benefit, organisations integrate it into their work, and competent people can operate it and verify the results. We investigate its benefits through this connection between infrastructure and application. Artificial intelligence remains one application within the broader knowledge economy.

2.5 Research and Innovation: What the Indicators Say about Inputs and Outcomes

The study considered research and development, entrepreneurship, intellectual property and international co-operation among the drivers of transition and recommended increased R&D investment in the first phase. Research therefore remains an integral part of this paper, alongside acquiring and applying existing knowledge and developing skills.[1: 24, 207, 307–319]

In the Global Innovation Index 2024, Oman ranked 74th among 133 economies, 59th for innovation inputs and 86th for outputs. Its profile reported R&D expenditure equivalent to 0.28% of GDP, using 2022 data. We retain the values as published. The rankings describe relative position, while the expenditure figure refers to 2022.[52: 1, 8]

The national statement for the baseline year reports expenditure of OMR 160.28 million in 2024, equivalent to 0.39% of GDP at current prices. This provides the consistent basis for comparison with 2025.[113]

This picture prompts examination of the connections that enable education, research, finance and technology to be applied in organisations and markets. On its own, however, it does not establish a single cause of the gap or prove that increased spending in a particular area is the best option. This examination respects the appropriate time horizons for basic research and knowledge serving the public interest; we do not require a direct commercial return from every project.

Table 2–1 **Selected Indicators Describing the Starting Point**

Field	Reference value	Data and publication periods	What the value means
Human capital	0.61	2020 edition; pre-pandemic conditions.	A forward-looking estimate for a child under those conditions, not a measure of adult skills. [51]
Education and learning	12.8 expected years and 8.6 learning-adjusted years.	2020 edition; pre-pandemic conditions.	The measures differ; the gap does not represent years of repetition. [51]
Science and engineering graduates	39.47% of all graduates.	2021 observations in the Global Innovation Index 2024.	Distribution by discipline, not a test of competence or demand. [52]
Research and development expenditure	0.28% of GDP in the index data and 0.39% in the national statement for 2024.	2022 observations in the Global Innovation Index 2024, and the national 2024 survey.	Total R&D expenditure as a share of GDP, not its return or government funding alone. [52] [113]
ICT development	91.7 out of 100.	2024 edition; reference year 2022.	A composite connectivity score, not a comprehensive coverage percentage. [53]

Field	Reference value	Data and publication periods	What the value means
Global Innovation Index	74th among 133 economies; inputs 59th and outputs 86th.	2024 edition; different observation years.	Relative rankings, not rates of conversion from inputs to outputs. [52]
E-government	41st globally, with a score of 0.8576.	2024 edition; reported by the Ministry in 2025.	A ranking consistent with UN data; it does not measure every service journey. [49] [118]

Each indicator is interpreted according to its definition and period. These data were not collected in one survey conducted in 2024 and cannot support a single average readiness score. We retain each edition because score changes may reflect updated data or coverage as well as actual performance changes.

2.6 Institutional and Legislative Frameworks in the Baseline Period

Legal frameworks for education, quality, qualifications, work and digital transactions predated the study. Documenting them helps identify what is needed. Should an existing mandate be activated, an implementation instrument developed or access to a service expanded? When is amendment or addition required? This section covers frameworks directly relevant to the paper; legislation affecting the knowledge economy extends beyond them.

Table 2–2 **Existing Frameworks Relevant to the Transition in 2024**

Field	Reference at the time	What the framework's existence establishes
Quality assurance and qualifications	Royal Decree 9/2021 concerning the Oman Authority for Academic Accreditation and Quality Assurance of Education and its annex, using the name in force when issued.	Mandates for quality assurance, development of the Oman Qualifications Framework, listing Omani qualifications and aligning foreign and international qualifications. Whether these alignments have been completed still needs to be verified through implementation monitoring. [29]
Higher education	The Higher Education Law issued by Royal Decree 27/2023.	Objectives relating to competencies, research, innovation and the knowledge economy, and forms of education and accreditation subject to their conditions. [30]
School education	The School Education Law issued by Royal Decree 31/2023.	Holistic learner development, quality assurance, curriculum and technology development, research, innovation and entrepreneurship. [54]
Labour and training	The Labour Law issued by Royal Decree 53/2023.	Definition of remote work, provision for ministerial decisions regulating certain working arrangements, and provisions for training and human-resource development. [18]

Field	Reference at the time	What the framework's existence establishes
Social protection	The Social Protection Law issued by Royal Decree 52/2023.	Inclusion of self-employed Omanis in the old-age, disability and death insurance branch. Each branch retains its own effective date and coverage scope. [55]
Transactions and data	The Electronic Transactions Law issued by Royal Decree 69/2008 and the Personal Data Protection Law issued by Royal Decree 6/2022, under the framework effective in the baseline year.	Two reference frameworks for electronic transactions and personal data protection during the baseline period, subject to each law's scope, obligations and conditions. [56] [57]

Article 7 of the School Education Law links curricula, teaching and learning outcomes to higher-education requirements and actual labour-market needs while preserving education's human and scientific purposes. The Higher Education Law covers academic, vocational, technical and professional pathways and connects competencies, research and innovation to the knowledge economy. These legal links existed in 2023; here we track their implementation.[30] [54]

On this basis, we follow changes in legal texts and mandates, and changes in users' ability to benefit from an instrument. Entity and legislative names are given as they stood in the relevant historical period, with subsequent developments explained in Chapter 3. Where a later measure accords with the study's proposals, we call this thematic alignment unless evidence establishes that it was adopted on the study's basis.

Labour Law 53/2023 addresses demand for competence within enterprises. Article 19 requires every employer to submit data on workers, vacancies and the annual Omanisation and replacement plan; the Law also regulates training for Omanis. Article 22 requires employers with twenty-five or more workers to announce occupations and their requirements and provide occupational classification, training and performance-assessment systems. Article 54 requires employers with fifty or more workers to prepare work regulations that include promotion and performance-assessment provisions. Omanisation ratios remain an existing legal instrument.[18]

The link therefore already existed in legislation. The task is to develop its instruments, expand coverage and monitor implementation. On 5 December 2024, a decree transferred vocational training to the Ministry of Labour and linked its curricula to occupational standards. We record this as a development late in the baseline year without assuming that the original study incorporated it before completion. Chapter 3 follows its consequences without counting it twice.[3]

2.7 Directions Proposed by the 2024 Study

The study translated the transition's purpose into sixteen recommendations, detailing their objectives, actions, relevant entities, timeframes and measurement methods. The following table organises them into six groups to clarify their connections. This grouping is used for presentation; the follow-up register in Appendix II preserves the original recommendation numbers, titles and locations.[1: 231–233, 234–320]

Table 2–3 **Groups of the Sixteen Recommendations**

Group	Recommendation numbers	Direction proposed in the study
Skills development and continuing learning	1, 3, 5, 8	Expand scholarship and qualification pathways, support access to vocational, technical, digital and professional qualifications, and encourage continuing learning.
Quality and recognition	4	Empower the quality-assurance and accreditation authority to strengthen trust in education and qualifications.
Long-term education	6, 15	Develop the educational process and its components, and invest in infrastructure that improves teaching and learning.
Work and the use of competence	7, 10, 11, 13	Prepare for promotion, retain talent, develop the employment framework, and build partnership between education and the labour market.
Culture and initiative	2, 9, 12	Encourage initiative, innovation and learning, address cultural challenges and raise awareness of digital transformation.
Research and cooperation	14, 16	Increase investment in R&D and expand international cooperation and knowledge connections.

These groups show how professional education relates to the quality of general education and the use of competence at work. The study brought together skills provision and recognition, career incentives and market partnerships. We preserve that connection and examine how new instruments can help implement it more clearly.

We also preserve the purpose of the cultural proposals: encouraging initiative, learning and innovation. Designing measures that serve this purpose requires understanding behaviour in its actual circumstances. This includes individual attitudes, pay, stability, participation costs, opportunities and available protection. This perspective helps us understand differences in career choices across groups without attributing them to a single cause.

Figure 8 **The 2024 Study's Sixteen Recommendations by Work Group**



Table 2–3. The numbers are those of the recommendations in the original study; Appendix II follows up the status of each.

Because outcomes emerge over different time horizons, we begin developing children's education and research capability early while also testing measures with nearer-term effects on services, recognition and the use of experience. Near-term results should help sustain long-term capability development without replacing it.

2.8 Phasing, Independent Services and Governance in the Original Approach

The study proposed a phased approach, initially concentrating resources on professional education and skills, addressing cultural challenges, and developing school and academic education. It allowed some second-phase factors to proceed in parallel where resources and conditions permitted or where they already formed part of entities' plans. It called for priorities to be reviewed as economic and technological conditions changed. This flexibility is part of the original approach on which we build.[1: 208–210]

Appraisal in the study considered readiness, economic impact, welfare, returns relative to cost and connections between factors. Cost and delivery capability were subsequently added when examining recommendations. The study's scores were relative assessments informed by experience and context. Here we continue to direct resources according to impact and feasibility of implementation and specify the requirements and data needed to compare alternatives.[1: 190–191, 229–233]

For independent services, the study identified an opportunity to expand the participation of people with knowledge and experience in serving organisations and individuals. Its training and development proposals included freelancing, e-commerce and digital skills. Realising this opportunity requires a complete pathway: the provider must be able to perform the service, reach a client, conclude a contract and deliver the service.[1: 29, 251–261]

This paper examines that opportunity within a direction for developing the knowledge-services market domestically and internationally, considering practice requirements, demand, provider capability and business sustainability. It sets principles for assessing viability and measuring outcomes, with implementing entities to develop programmes, targets and resources for markets and groups whose needs are demonstrated.

For governance, the study proposed strategic and financial oversight and two programmes: one for economic transformation and another for cultural change. It assigned roles to government, the private sector, educational institutions and civil society, covering planning, financing, coordination, monitoring, reporting and accountability. This remains a proposed model; this research has not established that its structure was created or implementation began.[1: 222–226]

The question now is how to perform these functions with clear responsibility and less overlap. We might strengthen an existing arrangement through a clearer mandate and defined powers and relationships, or establish a dedicated body to lead integration. Chapter 7 compares the two options after the following chapters assess the situation, so that the institutional form responds to a defined need.

2.9 Baseline Summary: What We Carry Forward

The starting point combines a national purpose with educational, occupational and digital frameworks and rules for training workers and identifying enterprise needs. We compare changes in instruments, coverage and connections against what already existed, presenting every statistical value with its reference year and definition.

We then examine what developments have added. Have they expanded training and recognition opportunities? Have they enabled knowledge to be applied within enterprises and public services, connected research with users, and facilitated access to markets and finance? We also track clarity of responsibilities and parties' rights. Judging outcomes requires a broader picture than the instrument's existence alone.

The register in Appendix II retains the sixteen recommendation numbers and follows their verifiable components. Legal or institutional aspects may advance while implementation outcomes still require measurement. We also distinguish alignment between a later measure and a study direction from attribution to the study; a historical or causal connection requires specific evidence.

2.10 Changes in the Statistical and Estimation Basis since 2024

This edition specifies each figure's source, year and definition and bases estimation on demand and the unit of activity. It therefore no longer uses 494,000 as the number of qualified people ready to work, or the earlier revenue ranges as national forecasts.

Appendix I documents how these estimates have been addressed, the reasons for the changes and their implications for the paper's argument, while preserving the original study's purpose. Appendix II records the status of each recommendation at the cut-off date and will be updated in every edition.[1 44]



03

CHAPTER 3

Developments from 2024 to 2026

New Instruments, Operational Applications and Emerging Outcomes

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3.1 From the Starting Point to More Specific Applications

Having established the starting point, we trace developments from late 2024 to the evidence cut-off. These cover education, work, digital transactions, the allocation of responsibilities, qualifications, skills development, company support and scientific cooperation. In each case, we identify the date, scope and verified implementation, following Chapter 1's evidence rules. Chapter 4 then diagnoses what these developments mean.[58] [10] [11] [59] [60]

The chapter's question is: What developments have been established since 2024? How far have they been implemented? What do they mean for the potential transition to a knowledge economy?

3.2 A New Planning Framework and Changes in Responsibilities

The Eleventh Five-Year Plan 2026–2030 provides a new temporal and institutional framework for advancing Oman Vision 2040. We therefore examine the paper's proposals against the Plan's diversification, capability and productivity objectives. Growth rates and other objectives in its announcement are treated as targets. Interventions are then prioritised according to the need addressed, their relationship to these purposes and the resources needed to implement them.[2]

In January 2026, responsibilities for education, research, quality assurance and Vision monitoring changed. Published texts document transfers of functions and resources between entities according to the mandates specified in the decrees. This map helps identify the entity relevant to each recommendation.[58]

Table 3–1 **Principal Relevant Institutional Changes**

Field	Change prescribed in January 2026	Implication for monitoring
Education	Royal Decree 14/2026 merged the Ministry of Higher Education, Research and Innovation with the Ministry of Education to form a unified Ministry of Education, subject to the mandates for research and quality assurance.	Updated responsibilities for general and higher education, with functions transferred to the two authorities remaining outside the Ministry.
Research and innovation	Royal Decree 11/2026 established the Research and Innovation Authority and transferred related functions and resources.	A dedicated entity whose programmes, funding and connections with institutions and users can be monitored.
Education quality assurance	Royal Decree 12/2026 changed the name to the Oman Authority for Quality Assurance of Education and transferred functions to it, including professional licences for educational occupations.	Updated quality and qualification functions, specifying that the licences here concern educational occupations.

Field	Change prescribed in January 2026	Implication for monitoring
Economy and Vision monitoring	Royal Decree 13/2026 merged the Vision Implementation Follow-up Unit into the Ministry of Economy, subject to Royal Decree 10/2026.	A changed accountability and coordination line, with the monitoring function continuing.
Economic coordination	Royal Decree 7/2026 established the Office of the Deputy Prime Minister for Economic Affairs and defined its mandates and structure. [111]	A higher level of economic coordination, proposed as the level that commissions the comparative study of the two leadership options. Its relationship with the Ministry of Economy's coordination in the current phase needs to be defined.

Source: texts published by the Ministry of Foreign Affairs and institutional information from the quality-assurance authority. The table establishes the legal changes; completion of operational transfers and their outcomes require further monitoring evidence.[58] [61]

The Oman Authority for Quality Assurance of Education describes its remit as school evaluation, accreditation of higher-education institutions and programmes, quality assurance in vocational and technical education, qualifications, and reviewer capacity building. Core quality and qualification functions existed before 2026. We therefore track what was transferred or reorganised, changes in assessment capability, coverage and turnaround times, and how findings are used for improvement.[61] [58] [29]

This map clarifies who sets policy, delivers services, evaluates quality and monitors outcomes. It identifies the entities to consult in each field. Chapter 7 then explains how their work can be coordinated after examining the need and their capacity to perform the required functions.

3.3 Education, Skills and Employment: Evolving Institutional Connections

Connections between education and work developed through three related steps. Royal Decree 61/2024 on the vocational training sector transferred vocational and technical training functions to the Ministry of Labour, including curriculum development according to approved occupational standards and levels. The National Occupational Standards Strategy was launched on 26 May 2025, with its announcement emphasising competencies, training quality and market relevance. On 26 July 2026, the launch of the National Employment Policy was announced in Salalah, with stated objectives addressing supply, demand, skills and decent work opportunities.[3] [4] [7]

Each instrument complements the others. A standard describes required performance; training builds the ability to deliver it; employment policy addresses market conditions and participation opportunities. The policy's objectives are recorded as reported by an entity involved in the launch. Details of its time horizon and governance require verification against the complete text when available. We also distinguish what the policy adopted from recommendations made by the forum at which it was launched.[7]

Evidence from School Education

In November 2025, the Ministry of Education described expanded admissions to engineering and industrial specialisations in Muscat and North Al Batinah between the 2024/2025 and 2025/2026 academic years. The pathway was linked to occupational standards and level four of the qualifications framework, combining school study with training in private institutions. This is actual implementation in specified specialisations and locations; graduation and transition into work should be followed next.[8]

By April 2026, the pathway was in its third year and expanding to South Al Batinah and to a travel and tourism specialisation.[119]

The Executive Regulation of the Higher Education Law, issued by Ministerial Decision 1/2026, adds another connection. Article 7 provides for representation of professional associations and sector skills units on the boards of trustees of the institutes and academies it covers, and for qualifications to be awarded according to the national framework. This differs from the composition of university and college boards. Existing institutions were given one year from the Regulation's entry into force on 12 January 2026 to comply.[31]

Professional representation becomes useful when it contributes to identifying needs, defining learning outcomes and assessment, and enabling application. We therefore propose tracking joint decisions and their use. This shows what representation adds beyond a board seat or signed agreement.

3.4 Qualifications, Standards and Experience: Connecting the System

Over two years, connections between education and occupations expanded and some gaps were filled. Alongside the launch of the National Occupational Standards Strategy in May 2025, a published introductory presentation by one skills unit reports that eleven units have been licensed under the Ministry of Labour. They cover energy and minerals; logistics; manufacturing; accounting, finance and auditing; engineering; fisheries; information technology; human resources; legal consulting; tourism; and design.[4 5]

A unit prepares its sector's occupational map and labour-market study, develops National Occupational Standards and assesses competence in preparation for certificates of competence and licences to practise. Not all units were established after 2024: the Accounting, Finance and Auditing Unit has been licensed since August 2021.[5 114]

The system comprises three complementary programmes. Occupational classification organises job titles and pathways; occupational competency assessment evaluates practitioners against the standard; and professional licensing links practice in specialist occupations to successful assessment. In the private sector, this applies to the person occupying the role, whether Omani or non-Omani, within the applicable scope.[5 115]

Each standard is assigned a level within the ten-level Oman Qualifications Framework. According to the presentation, assessment at levels four to six combines an objective examination with a professional interview. At level seven and above, it relies on an in-depth professional interview. Existing practitioners have two

routes: a direct competency test or a temporary one-year licence during which the practitioner completes a qualification or certificate aligned with the standard.[5] [115]

More than sixty National Occupational Standard packages have been developed for levels four to ten in the energy and minerals, logistics, manufacturing, and accounting, finance and auditing sectors. Approved by the Ministry of Labour, they are being implemented alongside more than 150 standards in the earlier format across various sectors. Approval is followed by development of assessment packages and centres, then phased assessment and licensing according to readiness. The dashboard therefore records the packages as approved instruments and documents announced professional licensing requirements for specified occupations. For occupations covered by the Energy and Minerals Unit, 1 September 2025 was set as the date from which a licence would be required for issuing or renewing work permits. A compliance grace period until 1 June 2026 was subsequently announced. The announcements establish timing and requirements within this scope; alone, they do not measure the number of licences granted or the extent of compliance.[6] [5] [115]

Figure 9 **The Occupational Standards and Skills Units System: From Standard to Licence**



Section 3.4 and sources [4], [5], [115]. Assessment and licensing begin in phases according to readiness; approval of the packages does not mean that they are fully applied.

Two specific foreign professional qualification alignments occurred in 2026. In January, the Chartered Management Institute (CMI) announced alignment of its Level 5 Management and Leadership qualification with level six of the Oman Qualifications Framework. In May, it announced alignment of its Level 7 Strategic Management and Leadership Practice qualification with level nine. Both were entered in the National Register of Qualifications. Alignment identifies a qualification's position in the framework. Academic degree equivalency, appointment, promotion and licensing remain subject to the competent authorities' requirements.[9] [10]

To understand this system, we distinguish four matters: a qualification and its level; competence and its evidence; a licence and its scope; and the opportunity to apply capability at work. Article 28 of the Labour Law requires a non-Omani seeking a licence to work to pass the standards test in occupations designated by the competent authority. Published occupational announcements indicate that licensing requirements in the private sector cover Omanis and non-Omanis in the specified occupations, subject to each announcement's scope, conditions and dates.[18] [115]

Employment and promotion in units of the State Administrative Apparatus are governed by the Civil Service Law issued by Royal Decree 120/2004, its Executive Regulation and their amendments, within their scope. Approval of an occupational standard does not automatically create a new obligation: incorporating it into an employment decision requires the appropriate legal instrument. Educational occupations have a separate licensing framework, while work-permit fee incentives relate to Omanisation, not occupational standards. This highlights the need for a competency framework connecting standards, performance evidence and decisions while respecting each employment system.[21] [18] [19]

In September 2026, the Ministry of Labour announced a promotion system for Omani civilian employees in permanent posts within the State Administrative Apparatus, excluding those subject to special employment systems. It has three pathways: accelerated for exceptional performance; flexible through comparative selection; and special for retaining and attracting talent. The announced design connects to Ejada and individual competency assessment. It provides an important basis for more consistent assessment guidance, while implementation must refer to the applicable decisions, rules and scope. Section 6.3 analyses the opportunities and assessment risks of these pathways. The announcement alone does not establish repeal of a legal provision or impact in practice.[122]

In accounting and finance, the Oman Association for Chartered Public Accountants offers professional classification services and verification of qualifications and experience. We record this as an announced service channel. Classification, document checks, performance assessment and licensing are distinct functions, each with its own requirements and authority. Identifying the body authorised to license each occupation remains one of the linkage issues to be resolved.[62]

Regulated professions offer more precise examples of different ways to demonstrate competence. The Advocacy and Legal Consultancy Law issued by Royal Decree 41/2024 and its Regulation issued by Decision 66/2025 govern registration, training, examinations by registration category and stage, and continuing professional development. In engineering, the Law Regulating Engineering Consultancy Offices, issued by Royal Decree 27/2016, distinguishes office licensing by the competent authority from professional verification to which the Oman Society of Engineers contributes under Article 15. These models inform assessment design; they do not transfer licensing authority to every association or establish a universal system for all occupations.[145] [146] [147]

Qualification Listing and Experience Pathways

The service for listing Omani qualifications sets requirements for the institution, programme, learning outcomes, assessment, quality, and the level and volume of learning. Listing therefore remains necessary even if the institution is licensed. Similarly, assigning an occupational standard to a framework level does not by itself make it a registered qualification.[22] [29]

As the standards system develops, one question remains unresolved here: How does a certificate of competence issued by a skills unit relate to the Oman Qualifications Framework, and what conditions govern its registration or linkage? Resolution requires agreement between the Ministry of Labour and the education quality-assurance authority, considering the nature of the certificate and each entity's mandate. Chapter 7 examines the arrangements.[22] [29]

For experienced applicants, Article 34 of the Higher Education Law and its Executive Regulation issued by Ministerial Decision 1/2026 connect experience with the possibility of admission to study, subject to prior qualification, experience, institutional accreditation and the relevant system's requirements. Admission, exemption from some learning requirements and assessment of occupational competence are distinct processes: recognising experience does not automatically confer a degree or licence.[30] [31] [47]

3.5 Working Arrangements: Regulated Opportunities with Distinct Boundaries

Part-time work was reorganised by Ministerial Decision 13/2025, effective from 20 January 2025, which repealed Decision 115/2021. It restricts employment under its provisions to Omanis, covers workers, jobseekers, students and retirees, and specifies contract, wage and social-protection registration requirements. It also states that work must not deprive higher-education students of their allowances and entitles them to an experience certificate for their employment period. This reorganises an existing pathway rather than introducing it for the first time.[63]

This arrangement allows learners to keep gaining work experience while they study. Part-time work differs from training and freelance work. Understanding its benefits requires data on employers, roles, hours, continuity and compatibility with study, alongside contract counts. Schedule suitability, the nature of the task and supervision quality may matter as much as the arrangement's legal availability.

Decision 523/2025, effective from 9 September 2025, regulates remote work and the rights and requirements of its parties. It requires the work to be performed within Oman and prohibits employers from contracting a worker outside Oman to work remotely for the establishment. We interpret it within the employment relationship it regulates, without generalising it to every cross-border transaction or contract for independent professional services.[79: Arts. 1–4]

An employee may perform a job from home online, a freelancer may provide a service to a client, and a company may sell a digital product through the same medium. Sharing a delivery channel does not make their legal relationships identical. We therefore establish the nature of the relationship first, then design each path-

way according to its professional, commercial and labour rules. Calling them all "flexible work" is insufficient.

Performance, Incentives and Omanisation

Ministerial Decision 317/2025, setting the minimum annual increment and regulating its payment to Omanis in the private sector, links entitlement and the rate to the performance report, with eligibility and grievance conditions. Meanwhile, Article 8 of Work Permit Regulation 602/2025 reduces non-Omani work-permit fees by 30% for establishments meeting Omanisation ratios and doubles them for non-compliant establishments. Decision 44/2026 amended the Regulation's effective date to 15 February 2026.[24] [19] [112]

These instruments show growing attention to performance quality alongside numerical instruments. The extent to which performance reports themselves draw on occupational standards remains a question to examine at enterprise and occupation level.

3.6 Digital Skills Development: From Training to Application and Employment

The Makeen report records 11,001 beneficiaries across 139 programmes over five years. The technical bootcamp pathway had 578 beneficiaries, of whom 288 found employment, approximately 50%. This rate applies to that pathway, not all participants. Impact monitoring also requires clear cohort and period definitions, avoiding double-counting of people, and verification of job continuity, relevance and the starting position.[64] [130]

The technical bootcamp design illustrates the connection between training and application. The April 2025 announcement of the second edition specified sixteen weeks of training and eight weeks of workplace experience for forty participants. The announcement establishes the cohort's design and launch. The Makeen report separates the results of the two editions: employment reached 84% in the first and 21.5% in the second. The difference is substantial despite similar design and may reflect measurement timing, demand or differences in specialisations. This is why the paper calls for following each cohort at a defined interval after completion, rather than relying on an aggregate rate.[130] [65]

Employment outcomes move the focus from how many people trained to how they apply their learning at work. Understanding them requires defining the cohort, denominator and follow-up period, and examining job relevance, continuity and income. Before generalising, we review participant selection and training costs against alternatives. Chapter 8 completes the measurement rules.[64] [65]

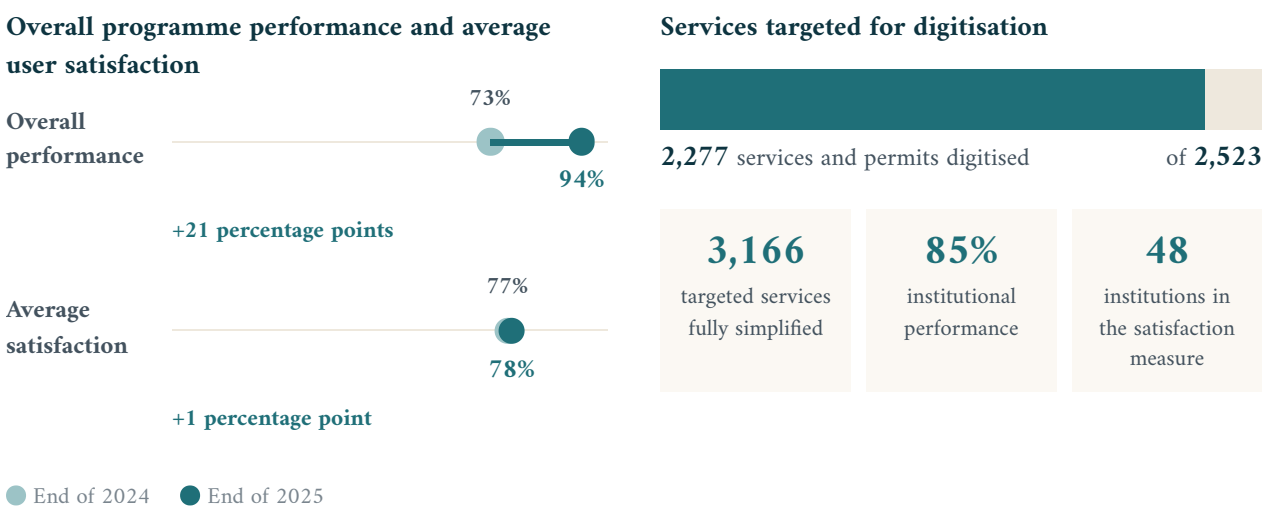
3.7 Digital Government: Simplifying and Connecting Services

Overall performance under Tahawul reached 94% by the end of 2025, compared with 73% at the end of 2024. Simplification of 3,166 targeted services had been completed, and 2,277 of 2,523 services and permits had been digitised, approximately 90%. Institutional performance reached 85%; average user satisfaction was

78% across 48 institutions, compared with 77% in 2024. These indicators have different denominators and scopes; they are not equivalent stages in one arithmetic formula.[11]

The annual report also records reductions of 69% in visits, 59% in documents, 52% in processing time, 53% in internal approvals and 44% in steps within the published measurement scope. These provide evidence of procedural outcomes beyond service counts. Estimating broader impact requires specifying coverage and how savings were measured, then relating them to the complete service journey, including its cost and quality, without attributing changes in national productivity to them.[11]

Figure 10 **The Tahawul Programme between the End of 2024 and the End of 2025**



Source [11]. These indicators have different denominators and scopes; they are not equivalent stages in one arithmetic formula.

The statement reports shared solutions launched in 2025, including the unified government services portal, the national platform for suggestions, complaints and reports, and the open-data portal. These demonstrate the provision of shared services and instruments beyond purchasing technical infrastructure.[11]

These instruments allow the user experience to be followed through service completion. How long did it take? What did it cost, and how good was the service? Was the same information requested repeatedly, and how did the application move between entities? This information clarifies what digitalisation adds to services; Chapter 4 develops the analysis.

AI policy moved from the 2024–2026 national programme to a 2026–2030 programme within the digital economy's second phase. Priorities concern use cases, data, skills, computing, investment and governance. Projects and trials are interpreted according to their actual stage: starting a trial or assessing readiness does not establish a realised productivity impact across the sector.[50 128 133]

Existing governance instruments include the Artificial Intelligence Expert Committee established at the Ministry of Transport, Communications and Information Technology by Ministerial Decision 124/2025. Its role includes advice and proposals on opportunities, challenges, policies, research, skills and safeguards. It is an

advisory channel whose outputs should feed into the relevant decisions; it is not in itself a national implementing authority replacing the competent authorities.[144]

3.8 Companies, Demand and Finance: Interconnected Support Instruments

The Ministry of Transport, Communications and Information Technology launched Sas for Excellence in June 2026, with participation from entities responsible for finance, labour, investment and procurement, the Development Bank and Petroleum Development Oman. The initiative combines support for technology companies and their local products with wage and liquidity assistance and access to contracts and markets.[59]

The announcement sets eligibility conditions, including a technology activity registration, local ownership of the product, and specified employment and growth levels. It therefore targets a defined group rather than automatically covering every start-up or freelancer. The source establishes the launch, instruments and conditions. Implementation is measured through support disbursed, contracts delivered and outcomes for participating companies.[59]

The announced design brings together the team, product, management, finance and market. We therefore monitor the initiative at enterprise level as well as trainee level. Chapter 4 examines what is needed to establish the effect of this combination on company operations.

On finance, the Central Bank's page on Islamic banking regulation presents the powers in Articles 135 and 136 of Banking Law 2/2025. These include licensing financing, financial leasing, payment and fintech activities, such as loan-based crowdfunding. The page establishes the scope of the powers as presented by the authority. Whether products suit knowledge enterprises is examined through their terms, costs and actual availability under the rules governing each activity.[66]

Loan Guarantees and Supplier Development

In February 2026, the Development Bank announced the launch of a loan guarantee programme in cooperation with Sohar Islamic, providing partial guarantees subject to project eligibility. The programme adds an instrument for accessing finance. Its benefits are assessed through applications, loans, outcomes and actual conditions. An announcement establishes the instrument's existence, not acceptance of every application or coverage of all risks.[14]

On the demand side, the Tamkeen initiative was launched in December 2025 to prepare SMEs for procurement and local content, followed by implementation in specified governorates. It complements older instruments: the Oman Investment Authority records SMEs' share of its companies' supply-chain expenditure as 19.8% in 2024 and approximately 19.9% in 2025. These figures are interpreted within their respective years, not counted as new 2026 progress or treated entirely as knowledge-service procurement.[23] [15] [116] [117]

Older Instruments that Still Shape Access

Fee, tax and banking-regulation measures predating the study period continue to shape access. In two phases announced in December 2022, the Ministry of Finance reviewed approximately 908 fees across four entities, then 739 across five entities. A total of 845 fees were reduced, abolished or merged across the two phases. A third phase covered five government units.[67]

The Income Tax Law provides special treatment for small enterprises at 3% rather than 15%, subject to ceilings of OMR 50,000 in capital, OMR 100,000 in gross income and an average workforce of fifteen. Treatment continues if increases do not exceed 20% in capital, 50% in income and ten workers, respectively: ceilings of OMR 60,000, OMR 150,000 and twenty-five workers. It does not cover every activity; certain activities, including professional activities under the applicable provisions, are excluded. The enterprise's activity and eligibility must therefore be checked, particularly for knowledge-service providers.[68]

Figure 11 **Special Tax Treatment for Small Enterprises and Its Ceilings**

3% Special rate for small enterprises — **rather than** — **15%** Standard rate

	Condition for entering the regime	Ceiling for remaining in it
Capital	OMR **50,000**	OMR **60,000** (+20%)
Gross income	OMR **100,000**	OMR **150,000** (+50%)
Average workforce	**15** workers	**25** workers (+10)

The Income Tax Law as presented in Section 3.8. The treatment does not cover every activity, and its conditions are read in the provisions in force.

An enterprise qualifying for special treatment may be exempt from tax if it meets exemption conditions. These include its Omani owner working full-time in the business, or the permanent employment of at least two Omanis for no less than six months during the tax year. In 2022, the Tax Authority encouraged eligible enterprises to register and benefit from the treatment.[68]

In banking regulation, a presentation, published in 2022, of an Arab Monetary Fund study describes reduced provisions and risk weights for SME lending and requirements for periodic loan reports. These measures were documented before the 2024 baseline and are not new additions in 2024–2026.[20] Another 2026 source reports a target of allocating at least 5% of commercial bank portfolios to the sector, with outstanding financing of approximately OMR 1 billion. We record when the target was reported without assuming that it was introduced then.[25]

The study links financing difficulties to inadequate documentation, weak accounting systems and insufficient collateral within enterprises. We therefore consider regulatory measures together with bank practice, enterprise readiness, and insolvency, collateral and enforcement rules. This helps identify what actually facilitates or obstructs access.[20]

For local content, the Oman Investment Authority launched four programmes in February 2023. They included a mandatory list whose first edition covered 25 services and 103 products to be purchased from local companies, a supplier development programme, and allocation of products and services to the local market.[69]

The Tender Board's Secretariat General issued a mandatory list of national products and jobs for government tenders. In June 2025, the Secretariat became the Authority for Projects, Tenders and Local Content. The list's second update in November 2024 covered approximately 2,084 goods carrying the national product identity. Both lists are updated periodically; their benefits are measured by actual purchases made through them.[70]

Initiatives in 2025 included allocating at least 10% of government tenders to SMEs, halving their Tender Board registration fees, and paying their invoices within fifteen to twenty-eight days.[17]

3.9 Contracting, Data and Enforcement: Foundations of Trust in Knowledge Activities

The Electronic Transactions Law issued by Royal Decree 39/2025 replaced the 2008 Law and took effect on 14 April 2025. It covers electronic documents, contracting, signatures and trust services, providing a framework for digital dealings. In each application, its provisions are read together with activity requirements, professional licensing and data protection.[71]

On enforcement, the Investment and Commerce Court Law took effect on 1 October 2025. The Court's jurisdiction covers a range of commercial and investment disputes, including intellectual property, subject to exceptions and transitional provisions. We record this development in the judicial framework. Dispute-resolution time, cost and enforcement of judgments require separate measurement and monitoring to determine whether they have improved.[72]

In 2026, Royal Decree 61/2026 issued the Law on Combating Information Technology Crimes, and Royal Decree 68/2026 amended certain provisions of the Personal Data Protection Law. These frameworks concern protection of the digital environment, the scope of data processing and parties' rights. Work procedures and data exchanges should therefore comply with the provisions applicable to each case.[73] [74]

This matters for the records of learners and assessment applicants, and for enterprise and client data. Recording an interview or connecting two systems requires technical capability, lawful use, defined retention periods and access rights. We aim to make transactions easier while preserving trust and rights. We assess compliance costs and follow how statutory protections are implemented.

3.10 Research and International Cooperation: Wider Channels for Capability Development

A dedicated research and innovation entity supports clearer monitoring of programmes, funding and connections with institutions and users. Its benefits are measured through scientific and applied outputs appropriate to each pathway. The evidence used here is insufficient to estimate its national economic return.[58]

In scientific cooperation, the Ministry of Education and the European Organization for Nuclear Research (CERN) signed an agreement on high-energy physics in Geneva on 19 May 2026. The agreement runs for five years and includes detailed cooperation protocols. It was ratified by Royal Decree 85/2026, issued on 15 September and published on 20 September. Signature and ratification are recorded as institutional progress, followed by monitoring of projects, researchers and results. The document is a cooperation framework, not membership of CERN.[60] [75]

Royal Decree 86/2026, issued on 21 September 2026, ratified the founding charter of the Digital Cooperation Organization signed in 2023. We record this as a development in the formal cooperation framework and monitor the deposit process, programmes, commitments and opportunities to benefit. Ratification alone does not establish realised export benefits.[76]

An international relationship becomes useful when a domestic institution turns it into work: selecting participants and projects, defining partners' responsibilities and resources, then tracking knowledge, experience and capabilities acquired. Benefits may include establishing a specialism or improving research tools without a rapid commercial return. Each benefit needs an appropriate time horizon and indicators, which differ from those for an applied project with a specified user.

3.11 The Latest Indicators: Uneven Progress and Questions about Use

The following table brings together the international index editions used for comparison, identifying data years and measurement types. The 2024 column uses the reference edition in Chapter 2, while every observation remains attributed to its own year. Section 4.4 presents complementary national research-activity data for 2025. This keeps the two series distinct and makes any substitution explicit.[52] [12] [77] [78]

Table 3–2 **Indicators, Dates and Limits of Comparison**

Indicator	Reference edition	Edition used for comparison	How to interpret it
Global Innovation Index	2024: 74th overall among 133 economies; inputs 59th; outputs 86th.	2025: 69th overall, inputs 55th and outputs 89th. In 2026: 69th overall among 139, inputs 47th and outputs 89th. [12] [150]	Overall and input positions improved from 2024, while the output ranking was unchanged between 2025 and 2026. Rankings are relative and affected by coverage, data and methodology; they do not directly measure conversion efficiency.
R&D expenditure	0.28% of GDP, using 2022 observations in the 2024 edition.	0.37%, using 2023 observations in the 2025 edition. [52] [12]	More recent reporting of an earlier year, not 2025 expenditure or the impact of an authority established in 2026.
ICT Development Index	91.7 out of 100 in the 2024 edition.	92.9 in the 2025 edition and 91.6 in the 2026 edition. The latter's principal reference year is 2024. [53] [77]	A series of scores, not rankings. Interpreting change requires examining components and data.
Network Readiness Index	No time comparison is constructed before ensuring framework comparability.	2025 edition: score 51.61, rank 59th among 127, and business-component rank 109th. [78]	A composite index; the business rank is not the percentage of enterprises lacking readiness.

Changes in innovation rankings prompt examination of the relationship between resources, their application and outcomes, but do not directly measure the efficiency with which inputs generate outputs. Rank confidence intervals in the 2024 and 2025 profiles overlap, so ranking movements alone cannot establish a decisive transition. Differences among network-readiness components likewise require examining their variables and technology use within enterprises; rankings are not comparable percentages.[12 77 78 52]

The ITU explains that its 2026 edition relies principally on 2024 data, using older data or estimates where necessary. The methodology is unchanged across the 2023–2026 editions, but published scores are not automatically revised with every country-data update. Differences may therefore reflect reporting and revision timing as well as connectivity changes. Service and usage evidence supplements the index, which does not cover every aspect of skills and safety.[77: 4, 19]

The Global Innovation Index 2026 is included in this update: 69th overall among 139 economies, 47th for inputs and 89th for outputs. Oman's profile gives an overall rank confidence interval of 66–81. Scores, components and their data years must be examined before interpreting change. The difference between input and output rankings alone identifies neither the location nor the cause of a blockage.[150]

3.12 Overall Developments and Their Relationship to the Study's Directions

Developments in 2024–2026 show movement from legal frameworks and available capabilities towards more specific connecting instruments and applications: occupational standards and assessments, shared digital systems, skills development, procurement and enterprise support, and applied-research links. Several align with the 2024 study's recommendations. Alignment does not establish that the study caused a decision, just as issuing an instrument does not establish its use or impact. Appendix II applies this distinction when following up recommendations.[1 3 4 11 130 131]

Table 3–3 **Developments within Earlier Directions for Action**

Direction and 2024 recommendation numbers	What has become clearer	What needs monitoring
Skills development and learning: 1, 3, 5, 8	Specific alignments, an occupational standards strategy and employment policy, and applied education and training pathways.	Access, cost, use of learning, and the coverage of support and recognition.
Quality and education: 4, 6, 15	Updated quality-assurance mandates and expanded school vocational education.	Coverage, implementation quality and learning outcomes by group and location.
Work and competence: 7, 10, 11, 13	Part-time and remote-work frameworks, performance incentives, training obligations, employment plans and professional representation.	Use of competence, work quality, employment decisions and progression pathways.
Initiative and digitalisation: 2, 9, 12	Shared services and instruments supporting companies and local products.	Instrument adoption and changed practice, rather than inferring national cultural change from initiative launches.
Research and cooperation: 14, 16	A dedicated research authority and an international scientific cooperation channel.	Projects, resources, and scientific and applied outputs over appropriate time horizons.

This analytical classification supports monitoring; it does not establish adoption of the recommendations or a completion percentage. Appendix II retains their original numbers and status at the cut-off date.

> *Alignment does not establish that the study caused a decision, just as issuing an instrument does not establish its use or impact.*

In the author's assessment, developments between 2024 and 2026 were consistent, to varying degrees, with the 2024 study's direction across the five fields. Progress was clearest in connecting education and work: approved occupational standards, skills units, an employment policy and a promotion system assigning explicit weight to competence. Government digitalisation advanced to measured procedural outcomes. Research resources increased, and demand channels for small enterprises expanded.

However, evidence remains insufficient to measure the use of these instruments in appointment and promotion decisions, knowledge-service procurement and research reaching users, or the outcomes of that use. Some instruments are recent, and the use of most remains unmeasured. Progress so far therefore lies in building instruments and capabilities, with specific procedural outcomes such as those in government digitalisation. Evidence is not yet sufficient to establish broader economic impact or attribute it to a particular programme. This assessment does not imply that the study caused those decisions.

Table 3–3a **The Author's Assessment by Field**

Field	Author's assessment
Skills development and learning	Clear progress in instruments; benefits from their use remain unmeasured.
Quality and education	Institutional progress through reorganisation and expansion of the school vocational pathway.
Work and competence	The clearest progress, with the promotion system the most notable development.
Initiative and digitalisation	Substantial progress in government digitalisation; limited progress in enterprise adoption.
Research and cooperation	Increased resources; the transition of research into use is not yet measured.

The instruments now available offer clearer scope to develop people, enterprises and markets together. Operational evidence and announced outcomes exist in specified fields, but the next step differs by field. It may involve completing capability, improving quality and access, developing demand or providing suitable finance. We therefore examine each field's actual needs without assuming every instrument is complete or that implementation alone addresses every need.

The picture is broadening from building instruments to connecting them with one another. The following timeline distinguishes what existed at the starting point from later additions. Chapter 4 then analyses what these capabilities enable and what remains unknown about implementation and outcomes.

3.13 A Timeline of Capability and Connection Building

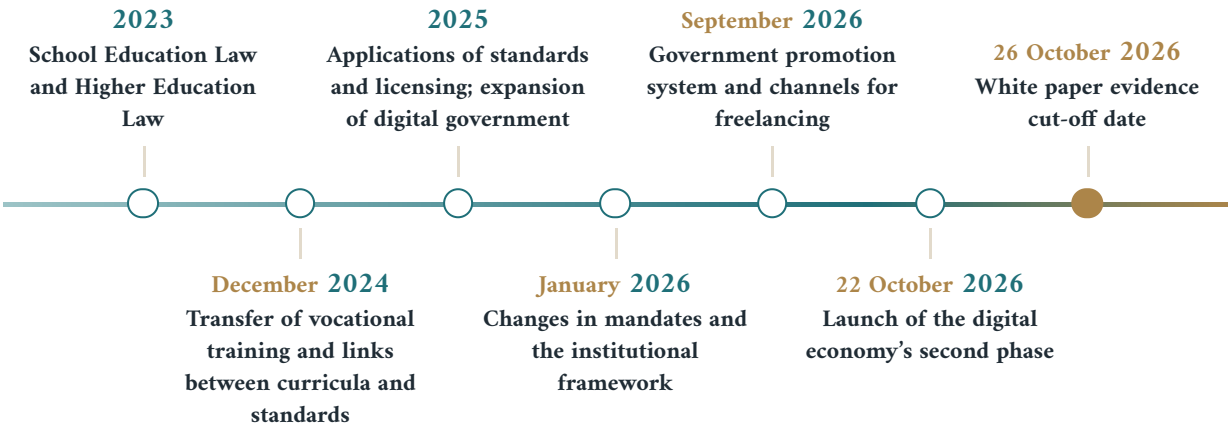
The table brings together selected milestones to show developments in recent years, preserving each initiative's original date even when documented in a later source.

Table 3–4 **Legal and Operational Milestones in Chronological Order**

Date	Established milestone	Place in the comparison
2021	Expanded quality-assurance mandates, preparation of a comprehensive qualifications framework, and launch of the National Digital Economy Programme. [29] [48]	Part of the baseline; we monitor subsequent expansion and activation.
2022–2023	Two phases of government-fee reviews covering 908 and then 739 fees; encouragement to use reduced tax treatment for small enterprises; the Oman Investment Authority's local-content programmes; and banking measures presented in the Arab Monetary Fund study. [67] [68] [69] [20]	Pre-baseline instruments that still shape access conditions.
2023	School Education and Higher Education Laws and the Labour Law, and their links to learning, occupations, worker training and enterprise needs. [30] [54] [18]	A legislative foundation predating the 2024 study.
2024	The Tender Board Secretariat General's mandatory list of national products and jobs, with its second update in November. [70]	An institutional-demand instrument, monitored through actual procurement.
Academic year 2024/2025 and 5 December 2024	Implementation of school vocational pathways, and transfer of vocational training to the Ministry of Labour with curricula linked to standards. [8] [3]	Implementation spanning two years and legislation issued late in the baseline year.
2025	Occupational standards strategy, performance and working-arrangement rules, and expansion of vocational education and service digitalisation. [4] [63] [79] [24] [8] [11]	New or reorganised instruments, with operational evidence of varying scope.
December 2025–February 2026	Launch and implementation of Tamkeen, followed by the loan guarantee programme. [23] [14]	Progress in access and connection channels, followed by monitoring credit and contracting outcomes.
January–May 2026	Reorganisation of education, research, quality assurance and monitoring; the Executive Regulation of the Higher Education Law; and two specified professional qualification alignments. [58] [31] [9] [10]	Development of frameworks and connections, with some functional transfers continuing.
26 July 2026	Launch of the National Employment Policy, with objectives covering supply, demand, skills and decent work. [7]	An announced launch; this edition did not use the full policy text or its impact results.
2025–2026	Approval of National Occupational Standard packages in energy and minerals, logistics, manufacturing, accounting, finance and auditing within a system of eleven licensed skills units; implementation is under way. [6] [5]	Approval of the instrument, with professional licensing requirements announced for specified occupations in 2025.

Each milestone has its own implementation stage and evidence strength. The number of milestones therefore does not equal the number of completed reforms.

Figure 12 **Selected Milestones in Building Capability and Connections**



Selected milestones from Chapter 3; implementation progress and strength of evidence vary between milestones.

This sequence brings together changes in instruments and documented implementation without turning successive decisions into a national completion percentage. It should be read alongside the second-phase digital economy programmes in the next section and the 2026 innovation results in the Chapter 4 progress dashboard.

In space, the achievements report confirms the launch of the OL-1 satellite in November 2024, while OmanSat remains planned for launch in 2029 according to the document. This illustrates why monitoring the second-phase programmes must distinguish completed capability, services in use and future targets.[140]

3.14 The Eight Digital Economy Implementation Programmes and Their Knowledge Economy Links

The second phase of the National Digital Economy Programme 2026–2030 provides an existing operating framework for eight programmes. They differ from the three strategic pillars and four enabling foundations, and also from the eight diagnostic fields in Chapter 4. The table shows their analytical relationship to the six directions without creating additional government programmes or mandates.[128]

Table 3–5 **The Eight Digital Programmes: Existing Design and the Contribution of Follow-up**

Programme	Focus in the documents	Relationship to the six directions	What the paper tracks
National Digital Transformation	Connected services, simplified procedures and shared data; the transition to an integrated journey is part of the existing design. [136]	Direction 5 on the enabling environment and 6 on governance, with links to the other directions.	Journey completion, time, cost and quality, and cross-entity use of systems and data.
Artificial Intelligence	Developing use, research capability, skills, investment and governance, distinguishing trials from operations. [133]	Directions 1, 3, 4, 5 and 6.	An application operating within a process, with documented improvement against a baseline, quality, safeguards and responsibility.
Digital Industry	Developing companies, products, skills, domestic demand and market access. [141]	Directions 1, 2, 3 and 4.	A product adopted by a client; a contract fulfilled and paid for, followed by repeat business; and capability that persists after support.
Digital Infrastructure	Connectivity, advanced and secure infrastructure, and the services needed to use it. [134]	Direction 5, alongside enabling enterprises and research.	Actual quality, coverage, cost and reliable availability by location and user group.
Digital Commerce	Expanding and regulating trade through digital channels and connecting it to services and markets. [135]	Directions 2 and 3, together with 5.	Active sellers, completed orders, settlement, payments and exports, distinguishing registration from activity.
Financial Technologies	Innovative financial services, payments, a testing environment and regulation, led by the Central Bank within its mandate. [142]	Directions 2, 3, 5 and 6.	Actual use, lower cost and time, access for target groups, quality and user protection.
Cybersecurity Industry	Developing industry, skills, products and markets through existing instruments, including Hadatha. [138] [137]	Directions 1, 2, 3, 4 and 5.	An approved product or service in use, an actual contract in a domestic or overseas market, and sustainable national capability.
Space	Space infrastructure, skills, applications, data, research and business. [139]	Directions 1, 2, 3, 4 and 5.	Space data or services used for a defined task, with a client or beneficiary, distinguishing planned from completed work.

These connections are analytical and overlapping, not an exclusive allocation of programmes to directions. The Ministry of Transport, Communications and Information Technology leads a major part of the system, alongside the Ministry of Commerce, Industry and Investment Promotion, the Telecommunications Regulatory Authority and the Central Bank of Oman, depending on the programme. The second-phase document sets out governance arrangements comprising the Council of Ministers' Financial and Economic Committee, a tech-

nical committee, the Technology Programmes Office and programme management teams. The integration proposal therefore begins by connecting to this governance and assessing its adequacy. Chapter 7 compares strengthening this governance with establishing a proposed national authority to lead national coordination of the knowledge-economy transition. Whether management of the eight-programme portfolio is assigned to it is a matter for the comparative study, not an existing arrangement or a decision already taken.[128]

The paper's role thus shifts from proposing digitalisation or integrated journeys as new ideas to examining their delivery and outcomes and showing their relationship to learning, research, enterprise capability and markets. The digital economy's direct contribution does not equal the contribution of the entire knowledge economy. Overlapping programme targets cannot be added to derive national value added or jobs without consistent definitions and controls against double-counting.[128] [129]

The second phase was launched on 22 October 2026. First-phase figures show that digital economy results extend beyond user satisfaction. The following table gives one published result per programme without combining them into one number.[154]

Table 3–6 **First-Phase Achievements: A Published Result for Each Programme**

Programme	Published result	Period	Source
National Digital Transformation	29.47 million government transactions completed digitally; 2.26 billion data records exchanged through the National Integration Platform.	2021–2025	Digital Economy Achievements, p. 15 [129]
Artificial Intelligence	22 specialist start-ups and OMR 79 million in private investment in AI projects.	2025	pp. 13 and 16 [129]
Digital Industry	COMEX deals exceeding OMR 116 million, compared with over OMR 40 million in 2023; 48 incubators and accelerators, and over OMR 127 million in start-up financing.	2023–2025	pp. 13 and 17 [129]
Digital Infrastructure	Mobile broadband population coverage of 99%; 99% of stations support 4G and 5G.	2025	p. 23 [129]
Digital Commerce	E-commerce volume of approximately OMR 288 million and more than 14,578 new licences.	2025	p. 21 [129]
Financial Technologies	703% growth in non-cash transaction volume; the number of licensed companies increased to 10.	2020–2025	p. 22 [129]
Cybersecurity Industry	17 local products, 13,000 beneficiaries and 3 Omani companies obtaining international accreditation.	2022–2025	Hadatha report [137]

Programme	Published result	Period	Source
Space	Launch of the OL-1 satellite, OMR 74 million in private investment and 25 companies operating in the sector.	2024–2025	p. 13 [129] [140]
Shared indicator: Omanisation	Omanisation in technology activities increased from 33% to 46%, and in technology occupations from 50% to 72%; more than 5,000 new technology jobs for Omanis over five years.	2022–2026	Launch announcement [154]

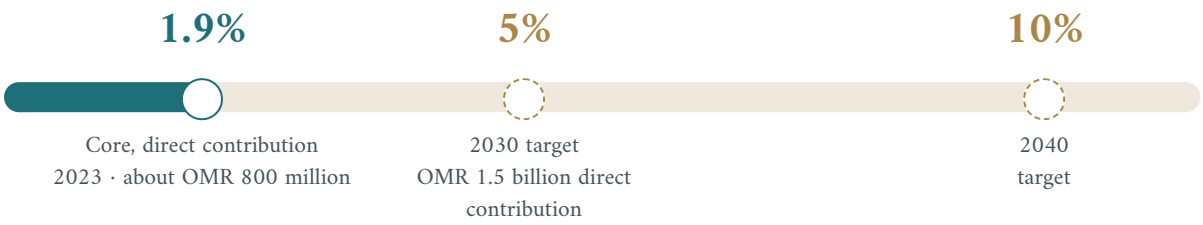
Figure 13 **Selected Results from the Eight Digital Programmes**



Selected data from Table 3–6 and sources [129], [137], [140]. Periods and definitions differ; these figures do not jointly measure a single economic impact.

The digital economy's GDP contribution is reported under different definitions. The core, direct contribution was approximately 1.9% in 2023, or about OMR 800 million. At the launch, a contribution of 9% was announced based on a survey conducted by the National Centre for Statistics and Information in 2026, without specifying the GDP reference year, definition scope or methodology. The 2030 target is a direct contribution of OMR 1.5 billion, approximately 5%, while the 2040 target is 10%. The 9% figure therefore cannot be compared with the 5% target, nor should either be derived from the other, until the Centre publishes the measured GDP year and definition. The 2028 follow-up will track each figure according to its published definition.[129 131 154]

Figure 14 **The Digital Economy's Contribution to GDP: Baseline and Targets**



9% Figure announced at the second-phase launch (October 2026), based on a 2026 survey, without specifying the GDP reference year, definition scope or methodology; it is therefore not placed on the same scale.

Sources [129], [131], [154]. The 9% figure is not compared with the 5% target, nor is either derived from the other, until the Centre publishes the measured GDP year and definition.



04

CHAPTER 4

The Knowledge Economy Ecosystem Today

Available Capabilities, Their Use and the Opportunities They Create

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4.1 From Developing Instruments to Identifying the Work Required

This chapter compares the 2024 picture with the latest evidence available by 26 October 2026, distinguishing the direction of change, implementation stage and strength of evidence. It shows where work has advanced and where assessment requires clearer data.

The diagnosis covers eight fields, and the progress dashboard details some of their aspects across eleven dimensions. These concern the broader knowledge economy and differ from the eight digital economy implementation programmes. The detail allows education, occupational connections, innovation and economic outcomes to be examined separately, as explained in the reading guide. Section 4.10 addresses the distribution of benefits across governorates and groups as a cross-cutting issue.[37 1 128]

In each field, we ask: What capability is required? Can users access and apply it at reasonable cost and within reasonable time? What is the outcome? The answers identify whether capability needs to be built, its use improved or its benefits measured. This is how we diagnose the ecosystem. Limited published information on an entity's work is insufficient to judge its performance or conclude that work is absent.

Table 4–1 **Capability, Use and Outcomes in the Diagnosis**

Field of analysis	Evidence of capability or an instrument's existence	What needs examination next
People	Learning, qualifications, standards and assessment instruments.	Work proficiency, skills use, career progression or income.
Enterprises	Available management, staff, systems and technology.	Improved processes, product quality, cost and productivity.
Research and innovation	Researchers, expenditure, laboratories and partnerships.	Knowledge quality, application, adoption and impact, according to the purpose of the research.
Public services and markets	Rules, channels, finance and contracting opportunities.	Access to and completion of services or contracts, and continued use.

This framework guides the diagnosis without assuming instruments are accessible to every group or scoring national performance. It draws on sources and documents available at the cut-off, distinguishing facts from interpretation and proposals from hypothetical examples.

The Economy's Scale and Opportunities to Move into Work

Table 4–2 **Economic and Labour Indicators that Help Define the Purpose**

Indicator and period	Published value	Meaning and limits of use
GDP at current prices, 2025	OMR 42.143 billion, compared with OMR 41.1943 billion in 2024.	A preliminary nominal value, up 2.3% annually. This is an increase at current prices, not a real growth rate. [80]
Real GDP growth, 2024	1.6% overall and 3.3% for non-oil activity.	Describes activity according to the IMF report without isolating knowledge's contribution. [17] In June 2026, the IMF mission estimated 2025 real growth at approximately 2.4%. [120]
Share of the labour force seeking work, 2024	3.3% overall and 12.5% among young people aged 15–24.	Rates as reported by the IMF. The 3.3% here is unrelated to non-oil growth and does not represent the share of all working-age Omanis or the number qualified for freelance work. [17]
Employment change	A decline of 0.5% in 2024, followed by growth of 1.1% by the end of the third quarter of 2025.	An aggregate change reported by the IMF; it does not identify occupations, wages or causes. [17]

This picture supports the need to diversify work opportunities and raise the value of existing activity. However, the share of young people in the labour force seeking work refers to specified ages and a particular data period. It cannot establish the size of the freelance market or justify a single instrument. Measuring exported knowledge services requires a definition distinguishing the transaction, sector and parties' economic residence. This is part of the national measurement development proposed in Chapter 8.

4.2 People: Learning, Demonstrating Competence and Using It

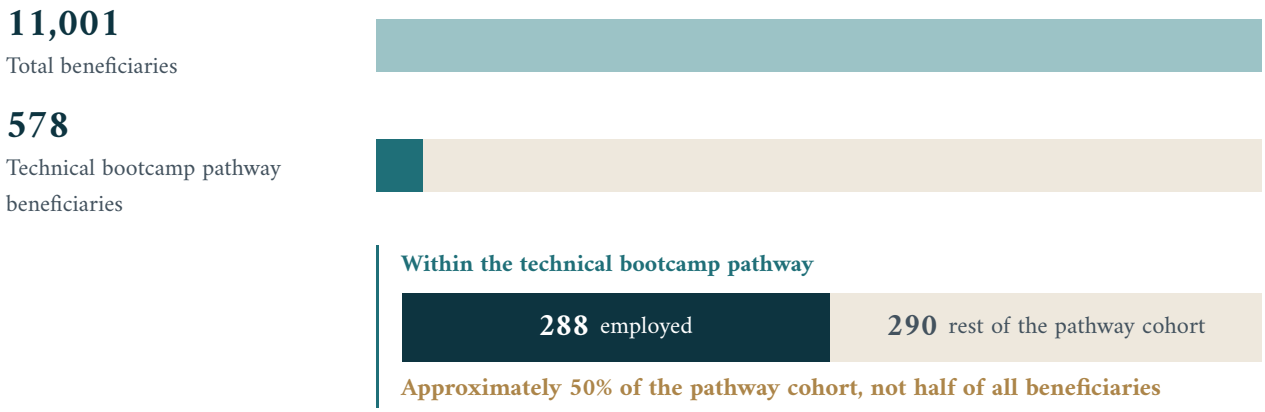
The Learning Foundation and Progression Pathways

The frameworks and applications in the previous chapter expanded the foundation connecting learning, competence and work. How far is this connection being used? Which occupations and groups does it cover? How is it reflected in individual performance? Answers require data beyond education and training enrolment counts.[18 3 4 7 8]

General education remains the long-term foundation of this pathway. Reading, mathematics, scientific thinking and communication help learners understand their specialisms and renew their knowledge. The baseline showed the historical difference between schooling duration and learning acquired. Today we ask what learners can accomplish and use, remembering that the historical indicator does not measure adults' skills in 2026.[51]

Makeen's employment result concerns the technical bootcamp pathway: 288 of 578 beneficiaries, approximately 50%, not half of all 11,001 beneficiaries. Monitoring requires cohort data, measurement dates, job type, relevance, continuity and income. The report also distinguishes Omanisation in ICT activities, rising from 41.5% to 45.5% between 2024 and 2025, from Omanisation in technical, specialist and leadership jobs, rising from 63% to 69%. Neither measures Omanis' share of all knowledge-intensive jobs.[130]

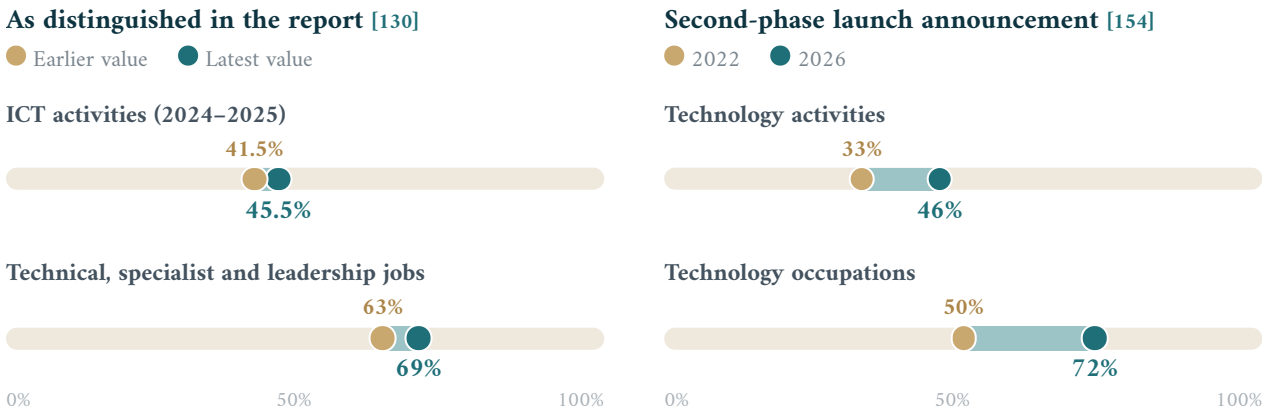
Figure 15 **Makeen's Employment Result: Why the Denominator Matters**



Section 4.2. Monitoring requires cohort data and measurement dates, as well as job type, relevance, continuity and income.

At the second-phase launch in October 2026, it was announced that Omanisation in technology activities had risen from 33% in 2022 to 46% in 2026, and in technology occupations from 50% to 72% over the same period. These have different denominators; neither represents Omanis' share of all knowledge-intensive jobs.[154]

Figure 16 **Published Omanisation Indicators in Technology Activities and Occupations**



Section 4.2 and source [154]. The four ratios have different denominators; none represents Omanis' share of all knowledge-intensive jobs.

From Qualification Recognition to Clear Occupational Performance

Trust in occupational competence is built through several mechanisms: the national framework and qualification listing, verification of experience and documents, assessment, and licensing where required. Each has a different legal effect. The listing service and announced alignments show development in some connections. What do institutions gain from this information in admissions, recruitment and development?[22] [9] [10] [62]

Occupational standards describe what should be accomplished. Enterprise obligations under the Labour Law provide a basis for identifying needs, training and assessment. Consistent use of an occupational reference in practice requires instruments, assessors, time and employer cooperation. We therefore track coverage, cost and actual use. Announcing a strategy does not establish that every recruitment and promotion decision now follows the standard.[18] [4]

The response begins with the individual's need: basic or specialist learning, demonstrating experience, meeting practice requirements, or reaching those who need the service. The enterprise itself may also need support to make better use of that person's competence.

Each entity may complete its internal work while the file stalls between entities. Simplifying the handover and clarifying the eligibility conferred by a qualification or assessment may then help more than retraining. We begin with what prevents the person from progressing and select the support accordingly.

4.3 Enterprises: Management, Productivity and Knowledge Absorption

Interpreting Individual and Business Readiness

Understanding individual skills requires examining the organisation in which they are used. In the Network Readiness Index 2025, Oman ranks 23rd on the Individuals sub-pillar and 109th on Businesses among 127 economies. The sub-pillars, however, combine different variables. The Businesses sub-pillar includes telecommunications investment, the cloud-computing market and AI investment deals, with missing values for some variables.[78]

These rankings guide an examination of business capabilities within the limits of what they measure. They do not directly describe management quality or the proportion of unready enterprises. Subtracting the ranks does not measure a gap between individuals and companies.[78]

The World Bank highlights the role of management and organisation in absorbing knowledge and innovation. Omani law requires covered enterprises to describe occupations, train staff and assess performance. The annual-increment decision also links some incentives to performance. These foundations help turn individual skills into organisational practice. Compliance and implementation quality are verified through enterprise records and process results.[33] [18] [24]

In entrepreneurship, the SME Development Authority announced the 2023–2025 results of the Promising Omani Start-ups Programme on 7 January 2026. They included 205 technology- and innovation-based enterprises and 549 jobs for young Omanis. These are announced counts within the programme's scope. Understanding what the support added requires tracking enterprise survival, growth and productivity, and the continuity and quality of jobs.[81]

What to Examine within an Enterprise

The response starts with a specific enterprise activity. How does it price a service and plan its execution and delivery? Does it know the cost, completion time and defects? How does that knowledge inform decisions? An accounting system should help forecast cash and calculate product costs; a sales platform should help fulfil orders and serve clients. In both cases, we examine what the enterprise gains from using the instrument in its work.

Consistent national data measuring knowledge-enterprise productivity as value added per working hour were not available for this paper. We therefore distinguish between an employer's view of performance, evidence of delivery quality and economic productivity measurement. Programme preparation begins with a specific process; the assessment broadens as suitable data become available.[34]

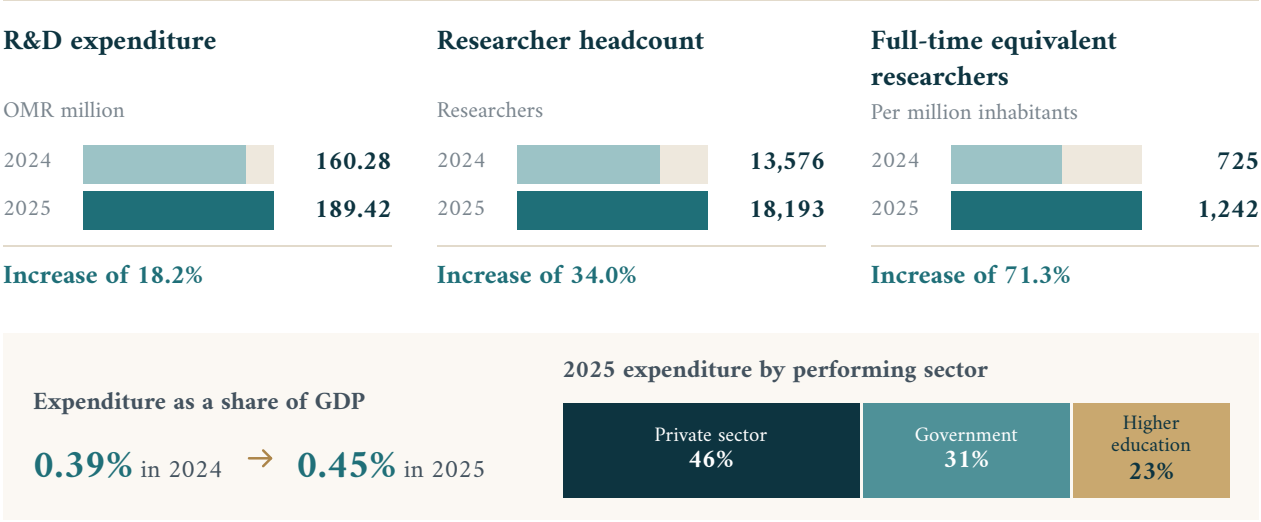
Knowledge may help in managing a tourism enterprise, improving an industrial process, designing a craft product or organising a professional service. In each case, we seek a defined application. The Oslo Manual helps distinguish having an idea from bringing a new or improved product or process into use. Improving how work is done can be innovation; innovation is not limited to a new invention.[32]

The 2025 AI achievements report records field assessments in 21 factories and the start of a smart industrial maturity assessment pathway for more than 100 factories. This establishes an expansion in tools for diagnosis and adoption, not a measured change in industrial productivity. The next step is to track factories moving from assessment to actual process change, then compare quality, time and resources before and after within the evaluation design's limits.[132]

4.4 Research, Development and Innovation: Expanding Capability, Connections Requiring Closer Examination

What the Latest National Data Show

Figure 17 Expansion in Reported Research Capability



Sources [13], [82], [113]. These are reported measures of activity and capability; alone, they do not measure research outcomes or use.

The national statement reports research and experimental development expenditure of approximately OMR 189.42 million in 2025, or 0.45% of GDP at current prices. In 2024, expenditure was approximately OMR 160.28 million, or 0.39% of GDP; the increase is therefore about 18.2%. Resources devoted to research have therefore expanded; translating results into products and services requires a different measure.[13] [113]

The statement allocates expenditure by performing sector: 46% private sector, 31% government and 23% higher education. We preserve the original table's definition because funding research and performing it are different functions.[13]

Comparing the surveys shows a limited shift in who performs research. In 2024, research performed in the private sector accounted for 46% of R&D expenditure, compared with 33% in government and 21% in higher education. In 2025, the private share remained 46%, government fell to 31% and higher education rose to 23%. Calculated by applying these shares to total expenditure, higher-education spending rose from approximately OMR 34 million to OMR 44 million, about 29%, faster than the approximately 18% rise in total expenditure.[156] [13]

This change needs explanation before conclusions are drawn: does it reflect activity, entity classification or survey response? Research personnel numbered 35,539 in 2025, with 42% in the private sector, 32% in government and 26% in higher education. Interpreting the private sector requires data on large companies,

including government-owned energy and industrial companies. Tables by performing sector, activity and funding source should be requested from the National Centre for Statistics and Information for the 2028 follow-up.[159]

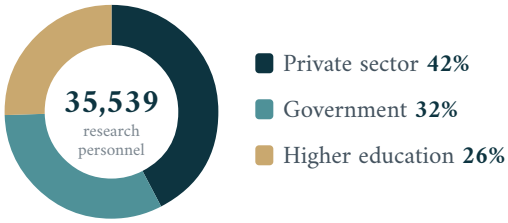
Figure 18 **Who Performs Research? Expenditure and Personnel by Sector**

Expenditure shares by performing sector



Higher-education spending calculated from the shares: from approximately OMR **34** million to OMR **44** million, an increase of about **29%**

Research personnel, 2025



Sources [13], [156], [159]. The change in shares needs explanation before conclusions are drawn: it may reflect activity, entity classification or survey response.

The statement reports researcher headcount rising from 13,576 in 2024 to 18,193 in 2025. Full-time-equivalent researchers per million inhabitants rose from 725 to 1,242. The calculated increases are approximately 34.0% and 71.3%, respectively.[82]

Understanding these increases begins with the distinction between the measures. The first counts people; the second reflects research time and population. Survey coverage and response may also affect the figures. We therefore describe them as an expansion in reported activity and examine survey details before drawing conclusions about their causes or impact.[82]

Each Type of Research Has Its Own Outputs and Horizon

Innovation comparisons call for examining the relationship between inputs and outputs. Rank differences, however, measure neither efficiency nor the location or cause of a barrier, and cannot link one year's spending to the outputs it produces: data years and outcome horizons differ. In 2026, inputs ranked 47th and outputs 89th. Explaining this divergence requires examining components and tracing projects, users and the capability to apply research.[150]

For diagnosis, we distinguish between producing knowledge, addressing a public problem, and developing a product or process. These purposes may overlap but do not replace the statistical classification of basic research, applied research and experimental development. Each purpose has an expected outcome and suitable horizon. In applied projects, we identify the user, testing environment, quality requirements, use rights and the cost of moving into operation.[83]

A university–enterprise relationship is understood through their shared work: the problem, each party's data, laboratories and expertise, testing in the user's environment and the user's ability to operate the solution. Differences in timescales, rights, quality criteria or finance may obstruct the relationship. These causes should be examined through documented cases, identifying whether the shortfall lies in knowledge, testing, user capability or demand.[37]

Existing Institutional Capabilities and Connections

Research capability is more than aggregate expenditure and researcher counts. Laboratories, centres, universities, government entities and companies play different roles in producing, testing and using knowledge. Existing bridges include the EJAAD platform, which connects industrial challenges with researchers and enables solutions, facilities and expertise to be offered. It originated through a partnership between the government research entity, the energy sector and Petroleum Development Oman. The need for knowledge transfer therefore does not imply an absence of platforms; it calls for evaluating what passes through them and what is put to use.[151]

At a documented 2023 meeting with Petroleum Development Oman, Sultan Qaboos University presented research areas including oil, the environment, sustainable energy, water and remote sensing. In private education, Sohar University's 2023–2024 postgraduate student handbook lists Intaj Sohar facilities, University–GRACE laboratories and a greenhouse. These examples establish capabilities and institutional engagement, not necessarily completed research contracts or measured economic benefits.[152] [153]

Table 4–2a **Research Capability by Institution and Research Function**

Component	What should be described and measured	What the evidence alone does not establish
Public universities and colleges	Specialisations, laboratories, research time, and the quality of research and scientific training; then applied projects by user.	A centre or publication does not establish adoption of a result or a commercial return.
Private universities and colleges	Facilities actually available, research investment, access and partnerships, separating teaching from research time.	A laboratory or programme name does not measure utilised capacity or output quality.
Sectoral institutes and centres	The public or technical mission; calibration, testing, data and research services; and their connection to a decision or service.	Current sources are insufficient to rank their coverage and quality nationally.
Companies and enterprises in energy and industry	Research performed within the company and research it funds at other organisations, experimentation, engineering and adoption, and rights to and use of results.	The performing-sector share is not its funding share; a partnership meeting is not an applied outcome.
Bridges and platforms, including EJAAD	The path from challenge to proposal, contract, testing and adoption, with the time taken at each stage, transition rates and reasons for stopping.	Memberships and published challenges do not equal implemented projects or solutions in use.

This is an analytical map, not a complete national inventory. It should be supplemented by a project register distinguishing basic research, applied research and experimental development; funder, performer and user; and available capacity and the extent of its use. Returns or institutional rankings should not be estimated before comparable data exist. Basic research and the humanities and social sciences retain their purposes, quality criteria and horizons alongside research with a direct user.

For international cooperation, after documenting the CERN agreement, we follow projects, participation, learning and use arising under it. These activities and their outcomes are what show the cooperation framework's benefit.[60]

4.5 Digital Capability: Completing Services and Using Technology at Work

From Application to Completion

Tahawul's results establish progress in delivery and published procedural savings: 94% overall performance, digitisation of 90% of targeted services, and reductions in visits, documents, processing time and steps. Average satisfaction of 78% is a separate measure from completion; interpreting it requires information on the sample and measurement design. The diagnosis therefore recognises these results while examining remaining cross-entity journey stages, service quality and continuity, and distribution of benefits.[11]

A specific journey should be traced from application to outcome, documenting time, cost, visits, repeated data submissions, completion and withdrawal rates. Savings in parts of a procedure must be distinguished from savings across the whole journey, and service averages from differences across governorates and groups. This reveals where shared systems are used and where connections or implementation need improvement.

Service completion, user satisfaction and connectivity indicators are each interpreted according to their definitions. High digital-programme completion does not guarantee improvement in every user journey. A connectivity-index change does not isolate the effect of service digitisation. Before comparison, we therefore specify the service, group, denominator and measurement date. The progress dashboard at the end of this chapter preserves these distinctions.[11] [77]

Technology Adoption within Enterprises

Within an enterprise, we identify the task the technology serves, the data it uses and who verifies its results. This also applies to AI as one component of the knowledge economy.

The International Labour Organization's 2025 study indicates wider exposure of some clerical and digital professional tasks to AI, with transformation more likely than full replacement for many jobs. This is an international estimate of potential exposure, not a forecast of specific job losses in Oman.[84]

We therefore begin with task content: how might delivery, quality, responsibility and price change? Demand for a service may rise while the time needed to supply it falls, changing skills requirements and pricing. These possibilities inform training and service design and should be tested in the relevant occupations and enterprises. An occupation's name alone cannot establish what will change.

4.6 Finance and Incentives: From Product Availability to Effective Access

Existing Instruments and Defined Conditions

The Development Bank's page presents working-capital finance linked to orders, receivables and export bills. Professional offices and information technology are among the targeted sectors. Beneficiaries fall into two groups: existing clients with subsidised loans, and projects new to the Bank with at least one year of operations. The instrument requires an operating plan, proposed collateral and transaction documents.[85]

An instrument therefore exists; its suitability for the activity and group must be examined. We begin with its conditions to identify who can benefit, avoiding assumptions either that finance is absent or that a product's existence makes it automatically available to every freelancer.

The SME Development Authority periodically publishes financing approvals from its portfolio. These describe approval, not actual disbursement, and alone do not measure the national financing gap. Programme names, closing dates and transaction status must be matched before comparing results or aggregating counts.[81]

The loan guarantee programme announced in February 2026 adds a way to share some risk. Project viability remains central to appraisal. Guarantees should be assessed alongside working-capital, contract, equity and investment finance according to need. Financing a contract with potential cash flows differs from financing research with an unclear use or an activity losing money because of fundamental design problems.[14] [85]

Published sources identify aspects of finance access worth examining, summarised below. The scale of each barrier and its distribution across enterprises require transaction data or further study suited to the question.

Table 4–3 **Published Evidence on Links in Access to Finance**

Evidence	What it shows	Relevant link
The Arab Monetary Fund study on SME financing in Oman. [20]	Inadequate documentation, weak accounting systems and insufficient collateral are major enterprise challenges.	Enterprise readiness.
Central Bank reductions in provisioning and risk weights, with periodic reporting on lending to the sector. [20]	Regulatory measures documented before 2024 to reduce lending costs; the effect of their continuation on finance access should be examined.	Regulatory framework.
A target to allocate at least 5% of commercial bank portfolios to the sector. [25]	A target for credit supply; the percentage of the target achieved should be monitored.	Bank practice.

Evidence	What it shows	Relevant link
The Development Bank loan guarantee programme, February 2026. [14]	Sharing part of the risk according to project eligibility.	Guarantees.
Financing approvals announced by the SME Development Authority. [81]	Approvals within a specified programme, establishing neither disbursement nor the national gap.	Operations.
The reduced 3% tax rate for small enterprises and encouragement to register. [68]	An existing incentive whose benefits depend on awareness and use.	Incentives.

Regulation, Banks and Enterprise Readiness

To understand financing difficulties, we examine regulatory rules and measures, then banks' collateral requirements, pricing and application procedures. We also examine enterprises' ability to demonstrate creditworthiness through records, documents and accounting systems. The assessment requires all three perspectives together.

Missing records may explain some cases, but not all. Improving records does not automatically lower credit prices. Product design, pricing, compliance cost, creditworthiness and risk must therefore be considered alongside better enterprise management.[20] [25]

An enterprise may complete work and then wait for payment. We ask when payment occurs, distinguishing accrued revenue from cash collected and profitability from working-capital needs. Financial training alone does not accelerate an overdue payment; finance alone does not correct poor pricing or absent demand. We therefore trace financing from application through decision, disbursement, use and repayment to identify where and why it stalls.

Support is assessed against the eligible group, service received and cost borne by each party. Tuition support may reduce direct expense while time, travel and assessment costs remain. Existing funding may be reallocated without increasing the budget, but the cost of using it remains. These distinctions matter in appraisal: available support does not guarantee access, and an unchanged budget line does not mean zero cost.

4.7 Regulation and Institutions: Clear Functions and Work Handovers

Institutional developments clarify where responsibilities lie, while occupational connections show the importance of the relationships between them. Who identifies occupational needs, approves standards, lists or aligns qualifications, provides and assesses learning, and decides licensing or recruitment? We trace these steps from the user's perspective, preserving each entity's mandate and avoiding unnecessary reassessment of the same evidence.[29] [18] [58] [31] [22]

One connection to monitor is the representation of professional associations and sector skills units on boards of trustees of institutes and academies covered by the Executive Regulation of the Higher Education Law. Monitoring takes account of the provision's scope and compliance period described in the previous chapter. How does representation affect curricula, application and graduates' use of learning?[31]

Additional coordination is needed where requirements conflict, the receiving entity is unclear, data are duplicated or approved work cannot be used. Multiple entities alone do not establish that need. Once a problem is located, we first consider an operating agreement, procedure or information connection before proposing a broader structure. Where capability is lacking within one entity, the response should address that deficiency.

Assessment pathways must balance professional trust with compliance costs. This requires recognition of experience where permitted, qualified assessors and published reassessment and grievance rules. It also requires managing conflicts of interest between training providers and those judging competence. These safeguards are designed for each occupation and its rules; rights remain governed by those rules.

The framework for contracts, documents, signatures and trust services provides an important basis for digital transactions, complemented by data-protection rules and their amendments. Ease of use varies by application and enterprise. We therefore examine the document, channel, evidence and responsibility as a transaction moves between entities, distinguishing public-data availability from collecting and linking personal data for assessment.[71] [86]

4.8 Demand and Markets: Turning Opportunities into Services in Use

Procurement Connects Capability to Markets

Sas for Excellence connects support, liquidity and procurement readiness under conditions targeting growing companies capable of scaling. To what extent do these instruments lead to contracts and outcomes for eligible firms? We examine this within the initiative's eligibility scope rather than generalising to all enterprises or freelancers.[87] [59]

Financial Circular 1/2026 was issued on 10 September 2026 and reported by Oman News Agency on 12 September. It directs government entities to assign certain specialist work and services not exceeding OMR 5,000 to independent Omani freelancers who are not employed, under the contracting procedures guide. This creates an opportunity to develop institutional demand for national knowledge services, whose market extends beyond this ceiling and government purchasing.[16]

The official report establishes the direction and general scope; detailed award conditions remain governed by the Circular and procedures guide. It must be distinguished from another circular carrying the same number in the index but addressing a different subject.[16] [88]

Markets grow when providers' capabilities meet actual needs. Providers also need opportunities to build a performance record and reach diverse buyers. Buyers specify needs and quality requirements and accept results under competition and eligibility rules. Policy addresses barriers to participation and continuity. Market expansion is therefore a priority without promising contracts to a particular group or entity.

Oman Investment Authority procurement, the SME share within it and Tamkeen supplier development provide an existing institutional-demand base. The knowledge-service component must be identified separately, then contracts, payment and repeat demand tracked.[15] [116] [117] [23]

Digital programmes provide existing demand and provider qualification channels. Jadara's results report 120 companies assessed, 47 qualified and agreements to trial 12 products; agreement to a trial is not a completed sale. Hadatha includes pathways for companies, products and external markets. A tender announcement for freelancers describes developing a cybersecurity-industry observatory over six months, covering data, dashboards and integration. It establishes specified specialist demand, not a contract award, delivery or payment. Monitoring should therefore follow qualification, trial, contract, collection and repeat business.[131] [137] [143]

Oman Investment Authority gives SMEs preferences in its companies' contracts. Contracts below OMR 25,000 are reserved for Riyada (Entrepreneurship) Card holders. A 10% price preference applies to contracts between OMR 25,000 and OMR 50,000, and preferences also include payment within fifteen days. Their benefits should be assessed through access to opportunities, contracts, quality, payment and repeat purchasing.[15] [116] [117]

Reaching External Markets and Sustaining Activity

Monitoring service exports begins with a specified transaction between a resident provider and a non-resident client or user. We identify the service, the parties' economic residence, delivery method and accrued revenue, recording cash collection separately. These are the paper's monitoring requirements; export classification follows the approved statistical definition. Recognising production in a period does not depend on collecting its payment in that same period.

Credit Oman offers trade-credit insurance to Oman-registered companies trading domestically or exporting goods or services, subject to coverage conditions. Its suitability for managing transaction risks is examined after identifying the buyer and verifying the service's insurance eligibility.[89]

Market access requires specialist skill, pricing, communication, contract management, quality assurance and customer service. Occupational recognition, data protection and contracting requirements vary across markets. Recognition of a qualification in Oman does not establish recognition of the licence or service abroad. Each opportunity requires examination of the market, service and conditions.[9] [10]

International exhibitions provide an organised market-access channel. At LEAP 2025, 46 Omani companies participated and more than 25 agreements worth over USD 40 million were signed. At LEAP 2026, more than 30 companies participated, including 24 supported by the Ministry; agreements and investment opportunities totalled approximately OMR 9 million across 27 agreements. COMEX deals exceeded OMR 116 million in 2025.[131] [158]

These are figures for agreements and opportunities, not completed contracts for which payment has been collected. An indicator should therefore be added to the third follow-up question: the percentage of exhibition agreements converted into completed contracts with payment received within 12 months.

Figure 19 **From Specialist Capability to Repeat Business**



Contract Provider Job **Contracts, providers and jobs are three different units of measurement.**

Section 4.8 and Direction Two. Access, finance and export conditions are examined in each market; expansion is not assumed automatically.

In the domestic market, an entity's role as a buyer must be distinguished from its role as a provider and competitor. The volume of its procurement from local enterprises is not conclusive about competitive conditions in another activity. Before selecting a competition-policy response, we examine the service, entry conditions, pricing and risks.

4.9 Data and Governance: Seeing the Pathway from Start to Outcome

The National Open Data Portal enables dataset search and download and identifies publishers, updates and versions. It publishes availability and documentation principles. This resource supports research and service development; datasets are selected for the question after checking definitions, periods, coverage and quality.[90]

Monitoring extends to programme operating records. One person may attend training repeatedly; financing approval differs from disbursement and use; and a licence establishes permission to practise within its scope, not the volume of activity. We therefore define the counting unit and stage before combining entity data into a national result.

To trace benefits, we connect the beneficiary, service, period and outcome, recording completers and non-completers. This can use aggregate data or limited-purpose exchange according to need and legal basis. It does not require collecting all data in one place.[86]

User experience complements entity data. A system may correctly record completion of one stage while the user encounters difficulty later. A complaint may be valid without precisely identifying its cause. Comparing records with users' accounts helps locate the remedy. Data origins are traced so that the same information ap-

pearing in both a report and a letter is not counted as two independent sources.

Instruments exist to connect planning and finance with outcomes. The Tahawul report records the 2025 launch of the Adaa platform for planning and evaluation. The Ministry of Finance describes development of programme and performance budgeting and the Maliyah system, with projects presented in April 2025. We examine their connection to programmes and beneficiaries and their influence on decisions, distinguishing development and presentation from full operation and measured impact.[11] [91]

4.10 Governorates, Participation and Incentives: Who Benefits?

Understanding benefit distribution requires examining governorates and groups alongside national averages. A digital channel or service centre establishes availability, but access costs, time, skills and assistance needs vary. The Sanad network documents a physical presence across governorates. Assessing equitable benefit requires understanding local service experiences and demand.[92]

Beneficiary profiles should distinguish beginners from practitioners and workers from jobseekers, and those able to study full-time from people constrained by family or employment commitments. Disability-related needs, language and accessibility should also be considered where they affect benefit.

Choosing a specialisation for a governorate requires examining actual competitiveness: accessible demand, enterprises and supply chains, skills, universities and centres, infrastructure, logistics and institutional cooperation. Needs may differ between a governorate with an industrial buyer and testing capability and one with skills but a small local market. These are analytical examples, not classifications of particular governorates. A sector's local reputation alone cannot determine the instrument.

Equity therefore does not mean identical projects or equal resource allocation. One location may need training connected to an existing buyer; another, a remote-work platform, shared laboratory or logistics connection. Options are compared by need, capacity, cost and potential external markets. Outcomes are measured through participation, cost, skills used, contracts, income and enterprise continuity, with geographic breakdowns and data protection. Current evidence does not permit a comprehensive ranking of governorates' competitiveness or a percentage gap between them.

Available evidence shows geographic differences. School vocational pathways began in Muscat and North Al Batinah before extending to South Al Batinah. Tamkeen was implemented in specified governorates. Musandam won first place globally in the e-environment category of the World Summit on the Information Society Prizes 2026. A special AI zone was established in Muscat.[8] [119] [23] [157]

These examples show knowledge-economy instruments reaching governorates at different times and scales. They do not support ranking governorates. That requires geographic indicators for employment, enterprises and services, which the paper proposes that the National Centre for Statistics and Information publish through Plan monitoring.

"Culture" alone does not explain reluctance to learn, change occupations or freelance. Behaviour often responds to perceived returns and risks: unstable income, learning costs, unclear professional requirements and job security that might be lost. The paper therefore addresses what the 2024 study called "the dominance of traditional culture" through incentives and conditions, not awareness campaigns alone. Change is measured through observed behaviour: who enrolled in training, moved into an occupation, or started and sustained an activity.[1]

4.11 Diagnostic Summary: From Building Capability to Maximising the Benefits of Knowledge

The priority combines three tasks: build capability where lacking, improve its use where available and fill gaps in outcome data. Specific frameworks and applications have advanced, and digital operational savings have emerged, while education and research retain foundational needs. Evidence does not support an economy-wide judgement on knowledge use and productivity. The diagnosis therefore ties each judgement to its scope and asks what benefits of the instruments have reached people, enterprises and society.

What Is Established and What Needs Testing?

For skills, specific instruments, standards and applications are established, but this paper lacked data measuring their effects on appointment and promotion. Services show procedural savings alongside higher completion, with satisfaction measured within a different scope. Financing studies describe barriers in enterprise documents, accounting systems and collateral. Tax provisions offer reduced rates and conditional exemptions, with encouragement to register. These findings differ in meaning but raise a shared question: How do we benefit from existing instruments? None alone establishes that limited awareness of the instruments is the cause of difficulty.[18] [19] [11] [20] [68]

> *The priority combines three tasks: build capability where lacking, improve its use where available and fill gaps in outcome data.*

The hypothesis of "value leakage at handover points" merits testing. An instrument may exist, yet benefits stall when work passes between entities. One entity may complete a standard or assessment without clarity on how the next uses it. Current evidence supports tracing specific points and questions, not concluding that this explains all system-wide difficulties. The barrier may lie within an entity, in demand, access costs or finance. Actual cases are needed to compare explanations; aggregate indicators alone are insufficient.

For employment, we select occupations with complete standards and trace a sample of appointment and promotion decisions. Was evidence of competence available? Did the decision-maker see and use it? If not, did a rule, assessment gap or internal procedure prevent use? We then compare similar cases, distinguishing missing evidence from failed transfer and both from cases where the evidence was not needed for that decision.

For activity licensing, we trace applications from submission to final decision, selecting completed and pending cases. We record processing time within each entity, waiting time at handovers, and reasons for requests to complete or resubmit documents. This helps identify whether delays occur between or within entities. Each journey's findings remain within its scope rather than being generalised to all services.

The proposed response follows what tracing establishes. The handover points table in Chapter 7 translates these examples and other transitions into proposed responsibilities, outputs and verification evidence. The value of coordination is judged by the verified blockage it resolves, avoiding extra procedures for every relationship between two entities. Gaps in published data do not by themselves prove that current coordination is failing, but they define what to measure when the two leadership options are compared: speed of joint decisions, completed transfer and use of outputs, administrative cost, and results for beneficiaries.

Table 4–4 **Summary of Capabilities, Connections and Opportunities**

Field	What current evidence establishes	What needs further examination or verification
People and skills	Learning, alignment and classification pathways, and an announced employment outcome for a training pathway. [9] [10] [62] [64]	Connecting specific competence to use and tracking beneficiaries' progress from their starting point.
Enterprises and productivity	Companies, training and development programmes, products and trials, and specified industrial-readiness assessments. [131] [132] [78]	Management's ability to use skills and technology to improve a process or product.
Research and innovation	Expenditure and multisector capabilities, university examples, industrial partnerships and EJAAD. [13] [151] [152] [153]	Research purposes and outputs, adoption, use rights and users' absorptive capacity.
Digital capability	Shared services and systems, published procedural savings and eight existing digital programmes. [11] [128]	Completion of user journeys, exchange of results, and the cost and quality of use.
Finance and incentives	Working-capital and contract products, trade-credit insurance and announced financing approvals. [85] [89] [81]	Product suitability, beneficiary eligibility, timing, use, collection and compliance.
Regulation and institutions	Mandates and frameworks for quality and transactions, and professional-representation links. [58] [61] [31] [71]	Clear responsibility, transition conditions, proportionate compliance and rights protection.

Field	What current evidence establishes	What needs further examination or verification
Demand and markets	Supplier development, product trials, a freelancer channel and digital export pathways. [23] [131] [137] [16]	Opportunities becoming contracts with accepted outputs, payment received and repeat business, and access to a defined market.
Data and measurement	An open-data portal and scattered records and reports on inputs and operations. [90]	Shared definitions connecting beneficiaries, services and outcomes without duplicate counts.

The table summarises the cited sources; its final column identifies what to examine. It assumes neither that every relationship is blocked nor that a particular reform should be adopted. The following dashboard sets out changes since the baseline and their supporting evidence.

A Brief Dashboard: What Has Changed since 2024?

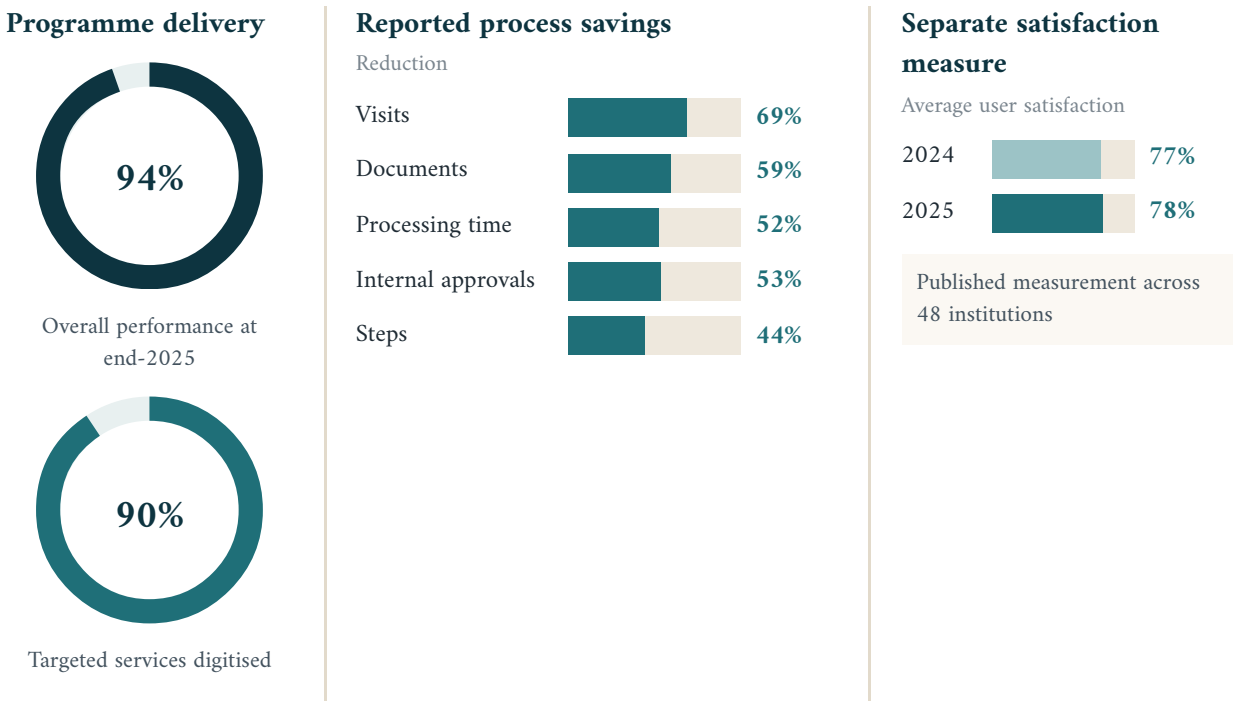
Measure	Baseline	Latest value	Change
Tahawul overall performance	73%, end of 2024.	94%, end of 2025.	21 percentage points: a change in programme delivery, not a 21% increase in economic productivity.
Published average user satisfaction	77%, end of 2024.	78%, end of 2025.	One percentage point. Measurement covers 48 institutions; interpretation requires a consistent measurement design.
ICT Development Index score	91.7 in the 2024 edition.	91.6 in the 2026 edition.	Down 0.1 points from the 2024 edition and 1.3 points from the 2025 edition. The 2026 edition relies principally on 2024 data; data revisions and reporting may affect the change.
Researcher headcount	13,576 in 2024.	18,193 in 2025.	Up 4,617, approximately 34.0%. This is an increase in the reported count; coverage and response require examination.
Full-time-equivalent researchers per million inhabitants	725 in 2024.	1,242 in 2025.	Up 517, approximately 71.3%. The measure is affected by research time, population and coverage.
R&D expenditure	OMR 160.28 million in 2024, or 0.39% of GDP.	OMR 189.42 million in 2025, or 0.45%.	Up OMR 29.14 million, approximately 18.2%, and 0.06 percentage points. This is a nominal spending increase, not a measure of the outcomes of its use.
Global Innovation Index: overall rank	74th in the 2024 edition.	69th in the 2026 edition.	Up five places from 2024 and unchanged from 2025. Changes in the number of economies and the confidence interval need to be taken into account.

Measure	Baseline	Latest value	Change
Global Innovation Index: inputs	59th in the 2024 edition.	47th in the 2026 edition.	Up 12 places from 2024 and eight from 2025: relative rankings, not growth rates.
Global Innovation Index: outputs	86th in the 2024 edition.	89th in the 2026 edition.	Down three places from 2024 and unchanged from 2025; alone, this does not identify the cause of difficulty.

Innovation ranks are relative positions among 133 economies in 2024 and 139 in 2025 and 2026. Overall-rank confidence intervals are considered; the 2026 interval is 66–81. These different indicators are not combined into one national percentage. Table 4–6 specifies comparison sources and limits.[150]

Operational data complement the dashboard: visits fell 69%, documents 59%, processing time 52%, internal approvals 53% and steps 44%, according to the Government Digital Transformation Annual Report 2025. These are procedural savings within the published scope, not changes in GDP or economy-wide productivity.[11]

Figure 20 **Digital Progress, Procedural Outcomes and Satisfaction**



Denominators and collection methods differ; read each indicator within its scope.

Source [11]. Do not subtract satisfaction from delivery progress or generalise procedural savings to GDP or productivity.

4.12 The Knowledge Economy Transition Progress Dashboard: 2024–2026

Have we progressed? Evidence shows progress in specific aspects, with uneven results across the transition's dimensions. The dashboard presents eleven dimensions, identifying the baseline, latest evidence, direction of change, implementation stage and evidence strength for each. A separate table calculates the scale of change where data permit.

How to Read the Dashboard

The direction of change is described as documented progress, partial progress, a mixed picture, broad stability, a decline in a specified measure, or insufficient evidence. We then identify the implementation stage: framework, capability, operation, use, outcome or impact. Evidence strength concerns what the source establishes: it may prove that a law was issued while its benefits remain unmeasured. These are analytical descriptions, not numerical scores or completion percentages.

Figure 21 **Key to Reading the Progress Dashboard**

Direction of change	Documented progress · Partial progress · Mixed picture · Broad stability · Decline in a specified measure · Insufficient evidence
Implementation stage	Framework → Capability → Operation → Use → Outcome → Impact
Strength of evidence	What the source establishes: it may prove that a law was issued while its benefits remain unmeasured

Section 4.12 and Part E of Appendix III. Analytical descriptions, not numerical scores or completion percentages.

Table 4–5 **Progress Dashboard: Baseline, Developments, Evidence and Implications**

1 Strategy, legislation and institutions

BASELINE

Education and Labour Laws in 2023, the qualifications framework in 2021, and transfer of training in late 2024.

LATEST AVAILABLE EVIDENCE

Occupational standards strategy announced in 2025; reorganisation through 2026 decrees; employment policy announced in July. Legal texts are distinguished from launch reports. [29] [30] [54] [18] [3] [4] [58] [7]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH

Documented progress in frameworks and launch announcements. Stage, depending on the evidence: an issued text, or an announced instrument and institutional connection. Strong evidence for the inspected text or announcement; limited evidence of impact.

IMPLICATIONS FOR ACTION

Activate functions, improve handovers and review overlaps, distinguishing decrees from economic outcomes.

2 Education and human capital

BASELINE

Existing rules and school vocational pathways begun before 2025.

LATEST AVAILABLE EVIDENCE

Expanded admissions in a specified engineering and industrial pathway. The historical learning indicator does not measure current adult skills. [8] [51]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH

Partial progress in access, operation and admissions in a defined pathway. Strong admissions evidence; insufficient evidence for a national judgement on learning quality.

IMPLICATIONS FOR ACTION

Track actual learning, graduation and transitions while preserving foundational education.

3 Connecting education and competence to work

BASELINE

Training and occupational-description obligations, and experience and qualification pathways.

LATEST AVAILABLE EVIDENCE

Standards-linked curricula, alignments and listing, occupational instruments and an employment policy. [18] [3] [8] [22] [9] [10] [4] [7]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH

Institutional progress and specified implementation: frameworks, connections and some use. Strong evidence for the text and described application; limited basis for generalisation.

IMPLICATIONS FOR ACTION

Complete coverage and quality, pursue mutual recognition within its limits, and measure use alongside certification.

4 Digital infrastructure and government services

BASELINE

Tahawul performance of 73% and satisfaction of 77% at end-2024; connectivity score 91.7 in the 2024 edition.

LATEST AVAILABLE EVIDENCE

Tahawul performance 94%, digitisation of 90% of targeted services, satisfaction 78%, and published savings in visits, documents and time; connectivity 91.6 in the 2026 edition. [11] [77]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH

Progress in delivery and actual procedural outcomes, limited satisfaction improvement and broadly stable connectivity. The administrative evidence has a defined scope and does not estimate overall economic impact.

IMPLICATIONS FOR ACTION

Measure complete user journeys and satisfaction with the whole journey, connecting systems across entities and governorates while keeping completion, satisfaction and connectivity separate.

5 Research capability

BASELINE

13,576 researchers, 725 full-time equivalents per million inhabitants, and expenditure of OMR 160.28 million, or 0.39%, in 2024.

LATEST AVAILABLE EVIDENCE

18,193 researchers, 1,242 full-time equivalents per million, and expenditure of OMR 189.42 million in 2025. [82] [13] [113]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH

An increase in reported inputs and research capability. Moderate evidence for interpreting change; survey details are needed.

IMPLICATIONS FOR ACTION

Examine survey methods, research types and capabilities, then track use.

6 Innovation and knowledge outputs

BASELINE

2024 edition: overall rank 74th, inputs 59th and outputs 86th.

LATEST AVAILABLE EVIDENCE

2025: 69th overall, inputs 55th and outputs 89th. In 2026: 69th overall among 139, inputs 47th and outputs 89th. [12] [150]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH

Overall and inputs improved from 2024; outputs unchanged between 2025 and 2026. Strong ranking evidence, insufficient to explain conversion efficiency or causality.

IMPLICATIONS FOR ACTION

Examine output components and links between research and adoption without assuming equal progress across dimensions.

7 Enterprise absorptive capacity and productivity

BASELINE

Enterprise-support and digitalisation instruments, without a comparable national-sample baseline for managerial capability.

LATEST AVAILABLE EVIDENCE

Jadara, supplier development and Numou; assessment of 21 factories and the start of maturity assessments for over 100, alongside network-readiness evidence. [131] [132] [78]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH

Specified instruments and applications supporting adoption. Readiness assessment does not establish productivity change or improvement across all enterprises.

IMPLICATIONS FOR ACTION

Measure management practice and technology use within a process, then assess productivity using consistent data and track whether improvements persist after support.

8 Finance and incentives

BASELINE

Enterprise financing products and regulatory measures documented in 2022, including reduced provisions and risk weights and lending reports, with differing eligibility and risks. [20]

LATEST AVAILABLE EVIDENCE

Loan guarantee programme announced in 2026. A 2026 source reports a portfolio-share target and contract and working-capital products but does not establish when each was introduced. [14] [25] [85]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH

A documented addition to guarantee instruments. Stage: announced launch alongside existing products. Evidence establishes the launch, not necessarily new regulatory progress or improved actual access.

IMPLICATIONS FOR ACTION

Trace application, decision, disbursement, cost and repayment by financing type and group, and measure enterprise readiness.

9 Demand, markets and value chains

BASELINE

Local content and procurement, with an SME share of 19.8% within Oman Investment Authority's scope in 2024.

LATEST AVAILABLE EVIDENCE

Tamkeen, the freelancer channel, Jadara product trials and Hadatha market pathways. [23] [16] [131] [137]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH

Expanded channels for connection, access, preparation and operation. Strong evidence for specified events; insufficient evidence of knowledge-market size.

IMPLICATIONS FOR ACTION

Use existing channels, diversify buyers, and separate knowledge procurement from total procurement.

10 Data, governance and measurement

BASELINE
Existing records, reports and planning instruments.

LATEST AVAILABLE EVIDENCE
Open data, Adaa, programme budgeting, and digital-programme governance comprising a committee, office and delivery teams. [11] [90] [91] [128]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH
Progress in instruments, some operational and others developing. Evidence has limited scope; the impact of integration is unresolved.

IMPLICATIONS FOR ACTION
Adopt common definitions, monitor outcomes and use them in decisions, rather than adding separate reporting requirements.

11 Economic and social outcomes

BASELINE
General economic and employment data without a unified knowledge-economy series.

LATEST AVAILABLE EVIDENCE
Changes in non-oil activity and employment, without isolating the knowledge transition's impact on income, exports or value added. [80] [17]

DIRECTION, IMPLEMENTATION STAGE AND EVIDENCE STRENGTH
Mixed aggregate results and general economic outcomes. Evidence cannot estimate the knowledge economy's separate impact.

IMPLICATIONS FOR ACTION
Connect sectoral measurement to work, income, productivity and exports without attributing aggregate change to initiatives. Omanis' share of knowledge-intensive jobs is a required data item unavailable in the sources used here.

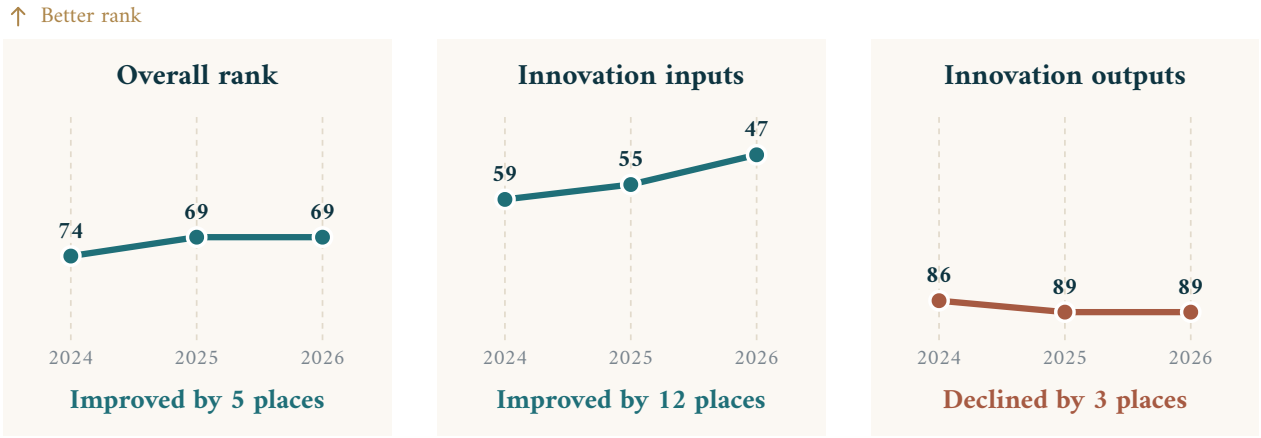
This analytical assessment draws on the listed sources and documents available by 26 October 2026. Implementation stages describe what is established within the scope of each piece of evidence, not the maturity of every institution or occupation. Because dimensions overlap, no average is calculated.

Table 4–6 **The Scale of Change Where Comparison Is Possible**

Indicator	Baseline and latest value	Calculated change	Meaning and limits
Tahawul performance	73% at end-2024 and 94% at end-2025.	Up 21 percentage points.	A change in programme delivery, not a 21% increase in economic productivity. [11]
Published average user satisfaction	77% at end-2024 and 78% at end-2025.	Up one percentage point.	Measurement across 48 institutions as reported; interpreting change requires a consistent measurement design. [11]

Indicator	Baseline and latest value	Calculated change	Meaning and limits
Global Innovation Index: overall, inputs and outputs	2024: overall 74th, inputs 59th, outputs 86th; 2025: 69th, 55th, 89th; 2026: 69th, 47th, 89th.	From 2024: overall up five places, inputs up 12, outputs down three. From 2025: overall and outputs unchanged, inputs up eight.	133 then 139 economies. Relative rankings with overlapping confidence intervals; the 2026 overall interval is 66–81. Component years differ, and rank differences do not measure conversion efficiency. [52] [12] [150]
ICT Development Index scores	91.7 in the 2024 edition, 92.9 in 2025 and 91.6 in 2026.	Down 0.1 points from the 2024 edition and 1.3 points from the 2025 edition.	The 2026 edition relies principally on 2024 data. Differences may reflect data revisions and reporting as well as connectivity changes. [53] [77]
Researcher headcount	13,576 in 2024 and 18,193 in 2025.	Up 4,617, approximately 34.0%.	A change in reported headcount requiring coverage and response checks; not a full-time-equivalent or productivity measure. [82]
Full-time-equivalent researchers per million inhabitants	725 in 2024 and 1,242 in 2025.	Up 517, approximately 71.3%.	An intensity measure affected by research time, population and coverage, distinct from headcount. [82]
R&D expenditure	OMR 160.28 million, or 0.39%, in 2024; OMR 189.42 million, or 0.45%, in 2025.	Up OMR 29.14 million, approximately 18.2%, and 0.06 percentage points.	A nominal change in expenditure on reported activity, not a measure of research outcomes or use. [113] [13]

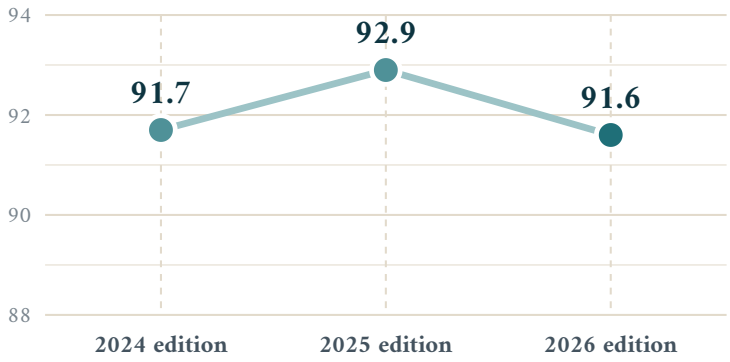
Figure 22 Innovation Ranking Trends across Three Editions



Change shown is between the 2024 and 2026 editions.

Sources [52], [12], [150]. Lower ranks are better. Relative positions among 133, then 139 economies; not a measure of conversion efficiency.

Figure 23 **ICT Development and Changes in the Published Score**



−0.1 points
from the 2024 edition

−1.3 points
from the 2025 edition

Scores out of 100, shown on a scale from 88 to 94 so that small differences are visible.

Sources [53], [77]. The main reference year for the 2026 edition is 2024. Differences may reflect revisions to data and reporting.

Calculations derive from published figures. Percentage changes are rounded to one decimal place, retaining sufficient precision for small differences. Percentage points compare percentages, points compare index scores, and places compare ranks. Where sources, definitions or coverage differ, change is interpreted with that limitation.

What Cannot Be Calculated from These Data?

This edition lacks sufficiently comparable evidence to estimate a national progress percentage for skills use, knowledge-enterprise productivity and exports, or licensing's effect on work quality. Research-expenditure change between 2024 and 2025 is calculated from the national statement and kept distinct from spending ratios in innovation-index editions, which refer to earlier years. These differences show where data gaps need to be filled.[52] [12] [13]

The Overall Strategic Picture

Evidence shows progress in frameworks and some employment links, with expansion of specific educational and service applications. Connectivity and innovation present a mixed picture. Evidence on market, productivity and income outcomes attributable to the knowledge economy remains less complete.

Some capabilities are still being built, and some aspects of their use have improved. The paper's sources lack data for measuring certain outcomes. We therefore use established capabilities, address gaps and improve measurement where missing data prevent better decisions. This leads to the options and directions in the next two chapters.



05

CHAPTER 5

From Diagnosis to Policy Options

How Value Is Created, Where It Stalls and the Available Responses

IN THIS CHAPTER

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5.1 From Describing Change to Selecting a Response

The progress dashboard shows what has changed and where judgement remains open. Analysis now turns to the response: Where does knowledge stall before becoming a benefit? We trace five pathways and select options from Appendix III suited to the barrier's location.

A theory of change explains how a resource, rule or capability leads to an outcome. Who uses it, how, and what is expected to change? We make assumptions and alternative explanations explicit. New occupational instruments allow the links between work needs, standards, learning, assessment and practice to be traced, recognising that pathways differ by occupation and type of knowledge.[93 3 4]

The analysis first clarifies what is known about the barrier and what requires verification. This provides the basis for prioritising national directions in Chapter 6.

Policy has several routes: complete an existing instrument, connect it to others, improve access or operation, or remove a regulatory barrier. New capability can be built where alternatives are insufficient. Recent evidence confirms that instruments for skills, finance and demand exist, so appraisal begins by examining them.[4 7 23 14]

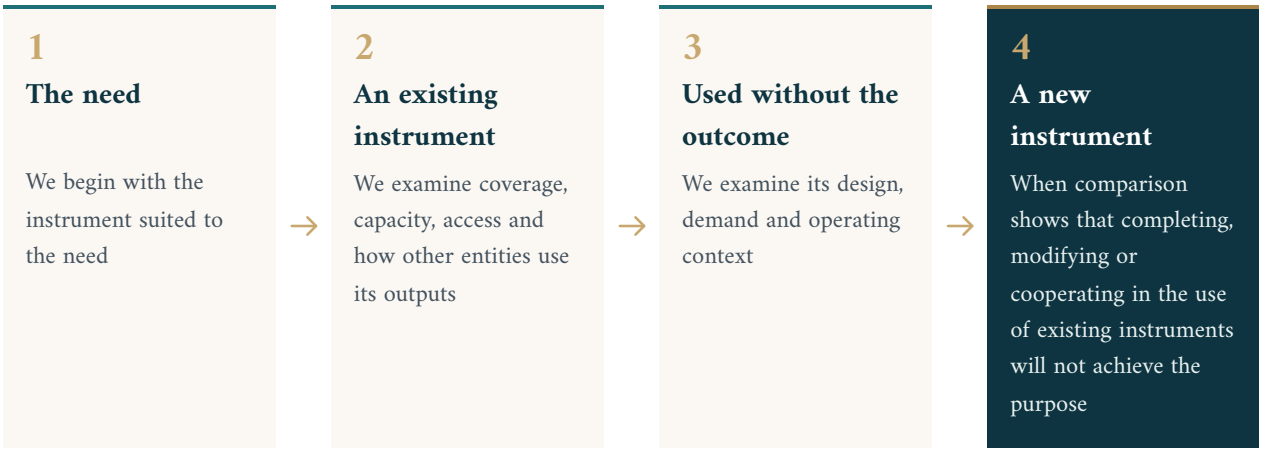
For each option, we identify the target group, need, instrument and outcome. Appendix III connects it to the 2024 recommendations. General and academic education, basic research and quality capabilities continue to serve their broader purposes and time horizons alongside these options.[1 83]

For each option, we explain the rationale and requirements for intervention, drawing on international experience within the sources' limits. When preparing implementation, the implementing entity completes the feasibility study and verifies prices and available capacity.

The Sequence for Selecting a Response

We begin with the instrument suited to the need. If it exists, we examine coverage, capacity, access and how other entities use its outputs. If it is used but does not produce the outcome, we examine its design, demand and operating context. A new instrument is considered when comparison shows that completing, modifying or cooperating in the use of existing instruments will not achieve the purpose.

Figure 24 **The Sequence for Selecting a Response**



Section 5.1. Completing, modifying or jointly using an existing instrument is preferred before creating a new one.

5.2 Value-Creation Pathways and the Unit of Outcome

The outcome pathway depends on the activity's purpose. It may start with a client need, a public problem, learning, or scientific knowledge that suggests a new use. A person or project may participate in several pathways, so shared outcomes are counted once. These pathways organise analysis without introducing an official sector classification.[37]

Table 5–1 **Value-Creation Pathways and What Can Be Measured**

Pathway	Relationship to test	The most directly measurable outcome
Learning and work	Demonstrable learning or experience, followed by a task allowing competence to be used.	Task proficiency, work quality, career progression or sustained income.
Enterprises and productivity	Knowledge and managerial and technological practices used in a process or product.	Higher quality or less waste, and improved productivity and value added, taking the resources used into account.
Research and innovation	New knowledge scientifically verified or developed and adopted, according to the research purpose.	Reliable knowledge and scientific capability, or a solution in use with traceable benefits.
Services and markets	Specialist capability reaching a client and meeting quality, contracting and delivery requirements.	An accepted service, revenue and payment collection, repeat purchasing or market access.
Public services and data	Knowledge, data and decision rules supporting a public task.	Less time and cost, better quality and access, and more effective decisions or services.

Measurement is selected according to the intervention's purpose within this analytical structure. Scientific and public-service pathways do not require a commercial buyer.

Figure 25 **Five Pathways to Value Creation**

	Pathway	How knowledge moves		Intended value
1	**Learning and work**	Learning or experience, then demonstrated competence, then a task	→	**Job quality, progression and income**
2	**Enterprise and productivity**	Knowledge, management and technology, then use within the enterprise	→	**Process improvement and value added**
3	**Research and innovation**	Research and verification, then development or adoption suited to the purpose	→	**Verified knowledge or a solution in use**
4	**Service and market**	Specialist capability, then contracting and accepted delivery	→	**Payment collection and repeat purchasing, or a new market**
5	**Public services and data**	Knowledge and data, then completion of a public task	→	**Better quality, access, time and cost**

Summary of Table 5–1. Benefits are measured according to purpose; the scientific and public pathways do not require a commercial buyer.

Learning continues after service delivery or the use of research. A task may reveal a need for further knowledge, and application may raise a scientific question. Clients may clarify quality requirements, while service data may call for procedural change. This information must reach those able to respond. Basic knowledge, education, health and service access are valued according to their purposes, whether or not they appear in commercial transactions.

5.3 Where Do the Five Pathways Stall?

We trace the five pathways from capability to outcome to identify stalled transitions and suitable responses. The following paragraphs examine together the link between learning and enterprise improvement, then set out safeguards for measuring economic impact. Appendix III details the options.

From Learning to Competence Use and Productivity

An occupational pathway begins with a need in the economy or labour market that can be described. We then identify whether the individual needs new learning, evidence of experience or an opportunity to use existing knowledge. Standards clarify performance requirements; qualifications and assessment help demonstrate cap-

ability. The competent entity makes decisions on practice, recruitment or contracting under its own rules. National frameworks support these connections, whose benefits also require demand and enterprises capable of using competence.[27] [18] [4] [7]

There are four transitions: occupational needs into learning content; learning or experience into evidence of competence; evidence into acceptance by the authorised entity; and acceptance into productive work. A gap may occur at only one transition. Someone unable to perform a task needs suitable learning. Delayed recognition or the absence of a buyer may call for a procedural change or a market channel rather than an additional course. Within enterprises, management, authority and data must be examined for their role in turning competence into process improvement, as in Section 4.3.

From Research to Knowledge, Application and Public Benefit

Society benefits from research in different ways. The Frascati Manual distinguishes basic research that expands knowledge without a specific application in view, applied research directed towards a practical aim, and experimental development generating additional knowledge to develop products or processes. Within basic research, it distinguishes pure from oriented research. This helps select suitable outcomes and horizons rather than measuring every project by an immediate commercial contract.[83]

For basic research, proposed monitoring addresses scientific quality, accumulated knowledge, capability development and transfer to other scientific users. For research addressing a public problem, it also identifies who uses the result in a decision or service and how benefit is tested. These criteria guide subsequent evaluation; they do not assign scores to institutions or projects in this paper.

From Specialist Capability to Contracts and Sustained Activity

A knowledge service needs a capable provider and a client with a need and willingness to contract. We first define the service, buyer, access channel, price and acceptance conditions before basing any estimate on an assumed share of a global market. We then track opportunities, bids, reasons for winning or losing, delivery, acceptance, invoicing and collection, distinguishing one-off contracts from repeat customers.

Sas for Excellence allows connections between company readiness, products and markets to be examined within its scope. For each service, we study the buyer, problem, how offers are selected and reasons for continuing the relationship. Data on contract size and its suitability for providers complete this picture; an initiative announcement alone cannot supply such information.[87]

From Public Services and Data to User Benefits

The knowledge economy includes improving public institutions and using information in decisions and services. The proposed pathway starts with a clear task, reliable data, operating rules and defined responsibility. We then measure what users experience: less waiting, less need to resubmit documents, better decisions or more equitable access. Benefits may arise without users paying a commercial price.

Digital service channels and public data allow this pathway to be examined. How does an application move between entities? Where are data requested repeatedly or waiting times extended? How does the process arrive at a correct outcome? Data availability and service digitisation provide a foundation; we examine what they subsequently add to the user experience.[11] [90]

A Shared Safeguard: From Activity Results to Additional Economic Impact

Before estimating impact, we define the measure. Gross value added is output value less intermediate consumption and differs from net profit. Intermediate consumption includes goods and services consumed in production, whether domestic or imported; employee compensation is part of value added. Output value also differs from accounting revenue and cash collection, even where they are similar for a simple service.[44]

Spending on knowledge activities may produce software or R&D results treated as produced assets when they meet the statistical definition. Their acquisition cost is then not fully deducted as intermediate consumption in the period. This differs from enterprise accounting treatment or administratively calling expenditure "investment". In practice, the treatment must follow national accounts rules and data rather than automatically adopt foreign practice.[94] [95]

5.4 When Does a Barrier Materially Affect the Outcome?

Which weakness actually constrains the outcome? A binding constraint is a barrier whose easing, the evidence suggests, would materially improve outcomes for a defined group within a specified period. Other barriers that could prevent improvement must also be considered. The case is investigated before treatment is selected; neither the lowest international rank nor the most frequent complaint alone identifies the binding constraint.

The diagnosis draws on the approach to diagnosing constraints in Integrated National Financing Framework guidance: define the problem and causes, test what prevents resolution, then assess the response's feasibility and effects. The guidance emphasises evidence and practical experience over a generic problem list. This logic is adapted to specific pathways here, not presented as a complete quantitative diagnosis of national growth constraints.[96]

To understand a barrier, we examine its associated cost or delay and costly attempts to bypass it, compare similar cases with different exposure, and track outcomes when it is eased. These four clues are considered together alongside alternative explanations: high wages may reflect a scarcity of high-quality expertise, waiting may reflect case complexity, and sales growth may reflect market improvement. These tests are proposed; national findings cannot be established until they are carried out.[96]

A theory of change helps assess evidence for and against each explanation. If competence is established and the task clear but outcomes weak, we examine use and demand before repeating training. If learning outcomes improve without opportunities to practise, we preserve learning's value and identify what prevented use. Where experimental comparison is impossible, tracing the change mechanism and analysing the intervention's contribution may help. A plausible contribution does not quantify an impact that has not been estimated.[93]

Responses differ by cause: missing resources or competence, unsuitable design, delayed implementation, discouraging incentives or insufficient demand. Causes may overlap. For each case, we therefore ask: Who is affected? At which step? What evidence supports this? What alternative explanation exists? What information might change the decision?

The Quality and Cost of Connections

A standard may reduce uncertainty about competence, but add time and cost if assessment capacity is scarce or procedures duplicated. Gains in trust and quality must be weighed against burdens or exclusion. These risks inform design without becoming a general claim that licensing or recognition harms competition.

5.5 Diagnostic Summary: What Is Established, What Is Plausible and Where to Begin

The matrix brings together six transition points: demonstrating and using competence, enterprise absorptive capacity, reaching demand, research transfer, contracting and liquidity, and service completion. Understanding them may change the response selected. The matrix distinguishes established evidence from explanations requiring testing.

Table 5–2 **From Local Evidence to Strategic Implications**

Transition point	What the evidence establishes	What can be inferred and what needs completion
From learning to competence and use	Standards and employment frameworks, educational pathways applying the connection, and announced alignments. [4] [7] [8] [9] [10]	Institutional progress and some implementation; effects on graduate performance and transition to work still need measurement.
From individual knowledge to enterprise practice	Statutory obligations relating to training and performance, and international evidence on management's importance. [18] [33] [97]	Examine skills use, authority and data within a specific process without generalising the constraint to every enterprise.
From specialist capability to demand and contracts	Channels for local content, supplier development, company support and independent contracting. [15] [23] [87] [16]	Potential to use existing institutional demand, while filling gaps in data on its knowledge component, repeat purchasing and overseas access.
From research to scientific knowledge or appropriate use	Increased reported research activity, institutional connections and a mixed relative innovation position. [12] [82]	Examine knowledge quality, testing, adoption and use rights by purpose; rankings alone do not identify the cause of difficulty.
From transactions to finance and continuity	Products, a new partial guarantee, regulatory measures and studies examining access to finance. [85] [14] [20]	Distinguish information gaps from risk, suitability and price, and measure actual access before judging the instrument's adequacy.
From services and data to user outcomes	Higher digital completion and published procedural savings, with a separate satisfaction indicator and data and measurement instruments. [11] [91]	Trace the whole journey, the quality of use and distribution of savings, retaining completion, satisfaction and time as indicators with different denominators.

The table summarises the evidence; its final column offers interpretation and questions for further inquiry. This is an analytical synthesis, not a national causal estimate.

A response gains priority when a barrier is established at a step affecting several outcomes and a suitable instrument can be operated. Even where a function is nationally important, each case still needs its own assessment of need. A programme therefore begins with an occupation, service or group whose need is demonstrated.

Competition, incentives, credit costs and international recognition remain core public-policy issues. Necessary changes should be studied directly without requiring a small pilot to fail first. Applied cases help explain weaknesses, but sectoral or system analysis remains necessary where the problem is broader.

5.6 Delivery Requirements, Technological Change and Benefit Distribution

Some steps depend on others' readiness: these are dependencies. Expanding assessment requires sufficient assessment capacity; opening procurement requires suppliers able to deliver; a digital solution requires users able to benefit. We identify these prerequisites and failure risks, then coordinate only as needed. We do not assume every reform must begin simultaneously.

Work therefore combines sequencing and parallel action. An independent reform may begin early while another pathway awaits an instrument, right or capability. Steps are ordered by their relationships and available evidence, allowing a ready pathway to operate before all others are complete.[1]

Technology may change tasks, prices and time. The ILO study examines task exposure to AI and work transformation; it does not estimate the loss of specific jobs in Oman. Proposed options are therefore tested under three possible conditions: shorter service-delivery time, changed client demand or quality expectations, and expansion constrained by liquidity. Foresight supports testing design and resilience through these scenarios; they are not forecasts with estimated probabilities.[84] [42]

Progress is measured by group, location, access cost and participation conditions. We watch for selection of easier cases to improve averages and for opportunities shifting between enterprises without new activity. Graduate and contract counts are therefore interpreted alongside outcome quality, persistence and distribution.

5.7 Developing Options before Appraisal

A strategic choice sets a direction, such as improving skills use within enterprises. An option specifies how to achieve the outcome for a defined group. Where complementary interventions are needed, they form a package whose combination is justified against a simpler intervention.

Before comparison, we define the group, outcome and time horizon and distinguish between different needs. Beginners and experienced practitioners need different services; these cannot be compared as though they deliver the same outcome.

Each case needs a reference scenario showing programmes, services, finance and behaviour expected to continue without the option. Continued activity has costs; we assume neither that work stops nor that it is costless. The Green Book's option-generation logic helps keep genuine alternatives before decision-makers and makes appraisal proportionate to expenditure and risk. It is adapted here without transferring UK fiscal rules to Oman.[38]

We then ask why intervention is needed and why existing arrangements or private contracts are insufficient. Needs may include information, coordination, public benefit or support for hard-to-reach groups. These are weighed against cost, the risk of crowding out existing providers or of continuing subsidy that is no longer necessary. Demand for a subsidised service raises the viability question; it does not resolve it.

Appendix III details eighteen options and their selection logic. The following table groups them into six families. Broader education, science, competition, regulation and finance policies remain within the national directions and are not confined to this list of applications.

The options complement competition, finance, investment, intellectual-property and international-market-access policies. Where several activities or groups share one barrier, a policy dossier should examine the rule or practice and the effects of alternatives to it. Addressing cases individually may be insufficient. The national directions include this broader level.

Table 5–3 **Option Groups and Their Intended Outcomes**

Field	Target outcome	Proposed options
Competence and use	Task proficiency and access to an appropriate setting for competence use.	Targeted learning, experience assessment or transition into use.
Enterprise absorptive capacity	Improvement in a process or product, with the improvement sustained in practice.	Better practice, technology adoption or purchase of a knowledge service.
Access to demand	Suitable contracting, accepted delivery and a sustainable commercial relationship.	Developing commercial readiness, access to buyers or a paid procurement trial.
Research transfer	An applied project moving to appropriate testing or use.	Further development, testing and knowledge-transfer services, or joint development.
Contracting and liquidity	Delivery of a viable activity and financing of its cash cycle.	Better contracts and collection, working capital or credit-risk management.
Service completion	Completion of a public task with suitable quality, access and cost.	Simplifying the journey, controlled data exchange or assistance with completion.

Figure 26 **Six Groups and Eighteen Policy Options**



Table 5–3 and Appendix III. The option is selected by need and feasibility; this list does not represent approved programmes. Codes follow Table A3–1.

Options may be selected or combined according to need. Appendix III retains their tracking codes, which do not indicate priority.

5.8 Operations and Feasibility in Programme Preparation

Programme design distinguishes between the national ecosystem, the public programme's mission and the provider's business. The programme dossier identifies the existing instruments to be used and the gaps or connections to be addressed, avoiding duplicate procedures, costs or verification bodies. Chapter 7 identifies who prepares the dossier and who approves its implementation.[39]

Table 5–4 **Requirements for Designing an Implementation Programme**

Component	What to specify before appraisal
Outcome and group	The intended task or change, beneficiary and starting point, measurement period, and expected outcome under continuing usual arrangements.
Roles and authority	The outcome owner, implementer, buyer, funder and quality-assurance body, with decision and grievance routes.

Component	What to specify before appraisal
Value delivery	Beneficiary selection, service provision, delivery verification, use, follow-up and exit.
Resources and capability	People, instruments, time and contracts; what exists and what must be purchased or developed; service capacity.
Finance and cost	Set-up and operating costs, updating, evaluation and beneficiaries' time; parties' contributions, risks and commitments.
Rights and data	Legal authority; worker, researcher and client rights; intellectual property; privacy; and the minimum necessary data.
Measurement and continuation decisions	Data sources, outcome indicators, comparison methods and criteria for progression, modification or stopping.

These requirements are detailed in proportion to programme scale, risk and expected impact.

Each option is examined through five connected questions: Is it strategically justified? Is it economically preferable? How will delivery be contracted? Is it affordable? Who manages it? These evolve together; operating costs or contracting difficulties may require redesign before selection. All are adapted to Omani rules and mandates.[38]

The preparing entity estimates workload, capacity and costs over an appropriate period, covering operations, quality, monitoring and continuity. In coordination with the financial authorities, it identifies existing funding, additional requirements, alternatives and opportunity costs. The feasibility study is completed during programme preparation, where data and delivery responsibility are available.

Selecting an entity begins with what existing institutions can provide. Can an existing institution take responsibility for the outcome and coordination? Should work be purchased from providers or shared capacity used? An independent entity, if proposed, is compared with alternatives on the basis of its life cycle, workload and transition costs. Calling expenditure "investment in value" determines neither its accounting classification nor its return.

5.9 Providing the Required Capability

Capability can be developed internally, purchased as a knowledge service or enabled through changes to work organisation. These routes are compared against the same outcome, as the table shows.

Table 5–5 **Alternative Ways to Provide Capability for the Same Outcome**

Option	What changes	Basis for appraisal
Continue existing arrangements	Existing practice or services continue without additional support.	The outcome already expected, its quality and cost.
Learning or recognition of competence	The person's capability or evidence of proficiency.	The performance gap and scope to use acquired capability.

Option	What changes	Basis for appraisal
Improve work organisation	Authority, responsibilities, data and decision-making.	Improved use and outcomes with the least necessary burden.
Purchase a knowledge service	Access to specialist expertise from a suitable provider.	Quality, continuity, competition and total cost.
Adopt technology or combine instruments	An additional instrument or a justified combination of complementary capabilities.	What the solution adds beyond a simpler option and whether it can be operated and updated.

The programme study defines the group, outcome and quality, comparing options while safeguarding rights and fairness and ensuring that results can be evaluated. It explains why existing arrangements are insufficient, what is added, who uses it and how it continues.

> *Pilots suit some cases; they are neither mandatory for every clear measure nor a guarantee of generalisability.*

Improving organisation or access to an existing service may suit the need better than creating a new resource. The resources needed for delivery are estimated after this comparison.

Where an option's effect remains uncertain, the key assumption can be tested before expansion, with clear measures and an explanation of how the results will inform decisions. Pilots suit some cases; they are neither mandatory for every clear measure nor a guarantee of generalisability.[98]

5.10 The Basis for the National Directions

National directions are based on selecting responses by need and examining existing instruments before adding others. Education, science and sectoral policies retain broader purposes than the applications compared here.

The next chapter presents preferred national directions and the rationale for sequencing work. Chapters 7 and 8 then define delivery responsibilities and outcome measurement.



06

CHAPTER 6

The Six Proposed National Directions

From Diagnosis to Strategic Choice

IN THIS CHAPTER

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Chapter 6 at a Glance

The six directions express one choice: connect capability development with maximising the benefits of knowledge. Measurement therefore covers what has been made available, how it has been used and what has resulted.

Direction		The shift proposed by the paper
1	**Education, competence and productive use**	From counting approved qualifications and standards to measuring their use in appointment and promotion decisions.
2	**Developing the knowledge-services market at home and abroad**	From supporting supply to developing repeat demand from government, private, institutional and international buyers.
3	**Strengthening enterprise capability and productivity**	From training detached from the enterprise to improving a specific process within it.
4	**Strengthening research, innovation and the transition of knowledge into use**	From measuring expenditure to tracking projects that reach users.
5	**Completing the enabling regulatory, financial and digital environment**	From making an instrument available to facilitating access and securing its full benefit.
6	**National coordination, measurement and learning**	From completion reports to a progress dashboard distinguishing frameworks, use and outcomes.

Source: Executive Summary and Chapter 6.

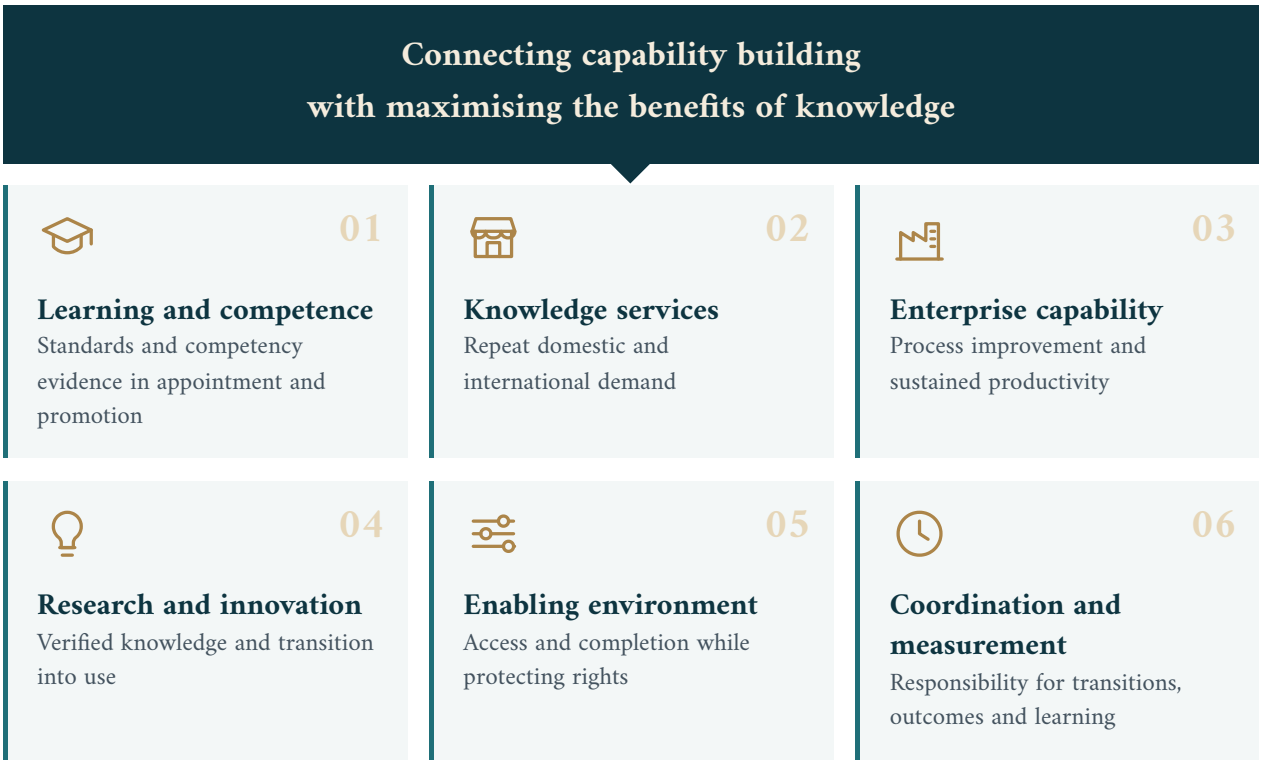
6.1 The Strategic Choice Proposed by the Paper

The paper recommends an integrated national direction connecting knowledge production and acquisition to its use in development. It organises work to 2030 within development plans and Oman Vision 2040. The six directions translate it into connected policies for education, markets, enterprises, research, the enabling environment and governance.[2]

The strategic choice combines three tasks: build long-term capabilities, develop demand for available knowledge and its productive use, and improve the environment connecting capability to opportunity. Parallel action makes use of what exists while education and research expand future capability.

These recommendations build on existing work without assuming the system is complete. Each direction states the proposed change, rationale, implementation approach, responsible parties and monitoring, with a brief account of the current situation. Chapters 3 and 4 retain the detailed developments and diagnostic evidence.

Figure 27 **The Six National Directions and the Required Shift**



Directions proposed by the paper to integrate the Plan's programmes. Approval determines mandates, resources and conditions of application.

6.2 What Justifies the Priority Order?

Priorities follow the progress dashboard in Section 4.12. It shows clearer institutional and occupational frameworks, educational applications, digital services, and expanding instruments for demand and financing. Innovation indicators, however, vary and knowledge-related economic outcomes remain insufficiently measured. Evidence differs in strength and scope. Priority therefore favours measures that help capability reach productive work; novelty alone or a single ranking is not enough to determine the order.

Education and scientific capability remain ongoing foundational priorities; connecting competence to demand and improving enterprise practice are early applied priorities. Data, coordination and barrier-removal work begins in parallel, while research projects advance according to maturity. Demand development need not wait for all standards to be completed, and standards development need not wait for all job opportunities to emerge. The pathways meet as readiness permits. Direction numbers organise presentation, not importance; Table 6–1 identifies each direction's priority type.[27] [33] [4] [7]

Table 6–1 **Directions, Required Shifts and the Basis for Sequencing**

Direction	Required shift	Diagnostic support	Priority type
1. Education, competence and use	From counting qualifications and standards to using them in appointment and promotion.	Approved frameworks, standards and sector skills units, with announced private-sector licensing requirements for Omanis and non-Omanis in covered occupations in line with their effective dates and conditions.	Ongoing foundational priority, and early applied priority for connecting standards to decisions.
2. Knowledge-services market	From supply support to repeat demand.	Local content, freelancer procurement and supplier development, with outcomes still needing measurement.	Early applied priority.
3. Enterprise capability	From detached training to process improvement within enterprises.	Supplier programmes and contract finance, with managerial, financial and digital gaps among small enterprises.	Early applied priority.
4. Research and innovation	From measuring expenditure to tracking projects that reach users.	Reported increases in spending and researchers, and divergent input and output rankings, prompting examination of outcomes without establishing a specific cause.	Ongoing, with application according to project maturity.
5. Enabling environment	From instrument availability to access.	Existing and new guarantee and service instruments. Satisfaction and financing evidence calls for examination of fees, compliance and integration in specified cases.	Immediate within the first work programme.
6. Governance and measurement	From completion reports to distinguishing frameworks, use and outcomes.	Shared transitions across multiple entities, with limited available evidence on whether these transitions and their outcomes are fully monitored.	Immediate, with the two institutional leadership options studied in the first work programme.

1

6.3 DIRECTION ONE

Education, Competence and Productive Use

From counting approved qualifications and standards to measuring their use in appointment and promotion decisions.

The priority is a national framework for assessing individual competencies, building on approved occupational standards and existing performance instruments and using them in appointment and promotion where suitable and legally authorised. Appendix V offers an indicative model for competent authorities to test. Connections begin in occupations ready for assessment and expand gradually while education continues serving its broader educational and scientific purposes.

Why This Direction?

Links between education and occupations expanded over the two-year period. Vocational and technical training functions moved to the Ministry of Labour, including curriculum development against approved standards. The National Occupational Standards Strategy was launched. A published skills-unit presentation reports eleven licensed units, including the Sector Skills Unit for Accounting, Finance and Auditing, licensed since 2021. The Ministry approved more than sixty National Occupational Standard packages at levels four to ten across four sectors, alongside more than 150 standards in the earlier format. Developments include aligning qualifications and listing them in the national register, and professional representation on boards of trustees of institutes and academies covered by the regulation. This foundation can help employers describe and verify required competence. Assessment preparation and operation follow approval, gradually according to readiness.[3 4 5 6 31 22 114 115]

Licensing requirements for specified occupations were announced in 2025 under each scope's effective dates and compliance periods. Announced private-sector requirements cover Omanis and non-Omanis in those occupations and are being completed gradually as standards are approved and implementation instruments issued. Data measuring how competency evidence informs appointment or promotion were not available for this paper. Mandatory instruments differ between the private sector and the State Administrative Apparatus; licence-fee incentives relate to Omanisation, not standards. The proposal therefore connects standards to decisions and measures that connection alongside standard and certificate counts.[18 19 21 115]

How Is It Implemented?

General, higher, vocational and professional education development continues, including teachers, curricula, teaching, assessment, learning environments, transition pathways and lifelong learning. Education's purposes extend beyond immediate occupational preparation. The proposed connection aims to give people clearer opportunities to use what they learn.[1 27]

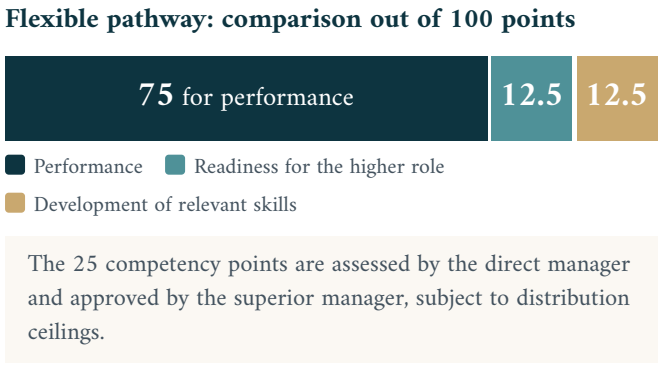
In the private sector, Labour Law Article 19 requires an annual Omanisation plan from every employer. Article 22 requires employers with at least twenty-five workers to advertise occupations and requirements and provide training and performance-assessment systems. Article 54 requires employers with at least fifty workers to establish work regulations covering promotion and assessment. National standards are proposed as references for these obligations where they cover the role. Where mandatory use of a standard requires implementing regulation, the necessary instrument should be issued.[18]

The connection preserves worker rights. Article 43 permits termination for incompetence subject to conditions, including specifying deficiencies and allowing at least six months to improve. Failure in a new assessment alone is therefore not treated as a legal ground for termination.[18]

Within the State Administrative Apparatus, Civil Service Law Article 15 establishes merit as the basis for appointment, and promotion provisions connect eligibility to job requirements. Article 28 addresses competence and seniority within the existing legal framework. Following announcement of new pathways, repeating old percentages is insufficient to describe new procedures, while an announcement alone is not enough to assume that the provision has been repealed. Reconciling these provisions requires reference to the legal instruments in force and their respective scopes. The proposal here is a job competency specification and documented performance evidence supporting decisions under any legally established pathway.[21] [122]

The Ministry of Labour announced the promotion system in September 2026, allocating OMR 10 million in 2026. Every pathway requires at least three years in the previous grade. The accelerated pathway requires three "Excellent" Ejada reports. The flexible pathway requires three reports rated at least "Good" and compares candidates out of 100 points: 75 for performance and 25 for competence. Competency points divide equally between readiness for the higher role (12.5) and development of relevant skills (12.5). The direct manager assesses these competencies and the superior manager approves the assessment, subject to distribution ceilings: no more than 10% of one manager's candidates may receive 20–25 points. The special pathway is determined by the unit head for critical roles requiring scarce skills, within 1% of the allocation for comparative selection.[122] [155]

Figure 28 **The Promotion System Announced in September 2026: Pathways and Points**



Section 6.3 and sources [122], [155]. A presentation of the announced design, not a measure of impact achieved.

The paper considers this a step in the right direction for building knowledge competencies: it loosens promotion's dependence on seniority alone and gives competence explicit weight. Its effect depends on three matters. First, direct managers assess competency points and superior managers approve, but the announced rules identify no national competency reference: this is where occupational standards and Appendix V contribute. Second, "skills development" is not tied to a specified development pathway. Third, the special pathway involves discretion requiring reasons and disclosure. The following table assesses the announced design; it does not measure impact achieved in practice.

Table 6–1a **Announced Promotion Pathways: Opportunities, Risks and Proposals**

Pathway	Opportunity for knowledge competencies	Risk	The paper's proposal
Accelerated	Rewards exceptional performance and shortens waiting.	Inflated "Excellent" ratings could turn it into seniority with high ratings.	Connect exceptional performance to documented work evidence and review a sample of decisions annually.
Flexible	Introduces competence, worth 25 points, into comparative selection.	Direct-manager assessment and superior approval without a stated reference in the announced rules; ceilings compress differences.	Base readiness points on an occupational-standard competency specification where available, and skills-development points on a completed development plan.
Special	Retains and attracts scarce skills.	Unit-head discretion under general criteria whose verification is not detailed in the announced rules.	Published scarcity criteria, written reasons, review by a body outside the unit and annual aggregate disclosure.

Appointment exceptions differ from the special promotion pathway. Article 12(e) of the Civil Service Law, as replaced by Royal Decree 106/2010, permits "the head of the unit, and no one else," to waive the minimum practical-experience requirement where such experience is scarce or the candidate has rare scientific expertise, under prescribed rules and procedures. In the published sources reviewed, the paper found no announced criteria defining scarcity or establishing alternative competence. This matters especially in leadership and supervisory roles, where selection quality affects the performance of the whole unit.[148]

An exception does not necessarily imply poor selection; it may legitimately attract scarce expertise. Its quality cannot be assessed without published criteria and documented reasons. The paper therefore proposes three safeguards for every appointment exception and special-pathway promotion: a written job competency specification; documented reasons for scarcity and evidence of capability; and annual aggregate disclosure of case numbers and outcomes. Appendix V explains how.

In Qatar, Decision 11/2026 of the President of the Civil Service and Government Development Bureau set annual training for promotion candidates: 20 in-person hours, 10 online hours through the Kafaa platform and 20 hours of alternative training. Alternatives comprise job rotation, on-the-job training, developmental secondment and job attachment. Those who had not completed earlier hours must undertake 60 in-person hours in 2026. The stated principle links training to competencies and performance-assessment results rather than pay grade.[149]

The transferable idea is to base "skills development" points on a development plan for the higher role combining in-person, online and workplace learning. Points should reward demonstrated competence and job-relevant learning, not hours alone. Completion of the required development can then become a condition for competing for roles for which fair, approved development pathways are in place, through the appropriate legal instrument. This refines recommendation seven of the 2024 study. Durations, obligations and the authorised entity are to be determined under Oman's system.

The framework is completed by technical, vocational, general and leadership development pathways suited to the target role, regulated recognition of prior learning and support under general eligibility criteria. Assessment identifies missing learning, after which capability is tested in suitable work. Course attendance cannot replace competence evidence; a person with demonstrated experience should not be excluded from competing for lacking a particular course without a prescribed basis. Learning incentives are measured by changed practice and performance, with neutral provider selection.[22] [5]

Related Plan Programmes

The Ministry of Labour leads the programmes "Applying Occupational Standards in Economic Sectors", "Developing the Ejada System to Enhance Government Employee Performance", "Developing the Training System" and "Strengthening Strategic Human Resource Planning in Government". This direction connects to these and to "Developing and Governing the Education Sector" and "Diversifying Education Pathways", led by the Ministry of Education. The standards programme serves the Vision objective of a system of employment, training, promotion and incentives based on competence and productivity.[126]

Connecting the standards programme to Ejada requires reviewing their arrangements and indicators within the Ministry of Labour, then completing competency specifications, assessment instruments and governance of use. Appendix V's indicative framework should be tested on a limited scale before mandatory coverage expands. Youth competitiveness and talent-development programmes provide supporting links outside the twenty-eight programmes covered by the core alignment.

Proposed Applications within the Programmes

1. Operationalise assessment for approved standards and assessment packages in the four sectors under programme 7-2. Measure time to certification and the proportion whose certificates employers used in a decision.

2. Make national standards a reference for Omanisation plans under Article 19 and performance assessment in enterprises covered by Articles 22 and 54, beginning with sectors with complete standards, under programme 7-2.

3. Test competency specifications and structured assessment in government occupations with complete standards, linking results to job descriptions and prescribed promotion pathways under programmes 7-2 and 12-4. Include assessor consistency, grievances and subsequent performance, following Appendix V.

4 Resolve the relationship between certificates of competence and the Oman Qualifications Framework, and the conditions for registration or linkage, through coordination between the Ministry of Labour and the Oman Authority for Quality Assurance of Education, under programme 1-1.[22]

What Is Measured?

Monitoring covers standards coverage, the proportion assessed, the use of evidence in appointment and promotion, and decision times. It also covers assessment quality and consistency, grievances and outcomes, differences in access to training, and performance and retention after selection. Approving standards and using them in decisions are separate stages; better decision quality is an outcome requiring independent evidence.

> *A qualification does not guarantee knowledge use, a standard does not create a job, and assessment cannot replace education.*

Box 6–1 How Sector Skills Councils Work Elsewhere

In the United Kingdom, sector bodies develop National Occupational Standards with employers; the standards database supports qualifications and professional registration. In Jordan, the Technical and Vocational Skills Development Commission works with sector councils comprising employers, workers and government and awards practice certificates in vocational and technical fields. In both, practitioners help write standards and the system connects them to licensing or employment decisions. Benefits depend on use as well as coverage.[124] [125]

A qualification does not guarantee knowledge use, a standard does not create a job, and assessment cannot replace education. Standards describe competence; assessment establishes capability. Capability then needs opportunity and demand. Connections should therefore be built gradually, sector by sector, as standards and assessment capacity become ready. One decision cannot build the entire pathway.

6.4 DIRECTION TWO

2 Developing the Knowledge-Services Market at Home and Abroad

From supporting supply to developing repeat demand from government, private, institutional and international buyers.

The priority is repeat demand for Omani knowledge services, connecting freelancers and enterprises with buyers at home and abroad. We begin with existing institutional channels, then diversify clients, respecting each market's practice and contracting conditions.

Why This Direction?

Procurement, local content and supplier development provide a demand base. SMEs accounted for 19.8% of Oman Investment Authority companies' supply-chain expenditure in 2024 and approximately 19.9% in 2025, supported by mandatory lists and supplier programmes. Initiatives in 2025 included allocating at least 10% of government tenders to SMEs and paying their invoices within fifteen to twenty-eight days. These are evidence of demand instruments within their respective years and scopes. Total public procurement alone does not reveal the knowledge-services share or sustained demand; transactions, buyers and providers must be tracked.[15] [23] [17] [116] [117]

Financial Circular 1/2026, issued on 10 September 2026, permits certain specialist work and services up to OMR 5,000 to be assigned to independent Omani freelancers who are not employed, under the contracting procedures guide. Official reporting establishes the direction and general scope; detailed conditions remain in the Circular and guide. The freelance e-commerce licence provides another channel, with professional licensing where required. Availability is a starting point; outcomes are demonstrated through delivered contracts, payment and repeat purchasing.[16] [99]

How Is It Implemented?

Standards do not create buyers, and licences do not create contracts. Markets grow when buyers with needs and contracting capacity meet providers offering suitable quality and price. Both sides need help finding each other and completing the commercial relationship. Standards describe competence, licences permit practice, and contracts require actual demand.

We begin with existing institutional demand channels, then expand access to private-sector and overseas buyers. At every stage, we ask whether contracts were fulfilled and paid on time, whether customers returned, and whether the client base diversified. Contracts, providers and jobs are counted separately so results complement employment data without duplication.

Freelancing is part of a wider market including SMEs and specialist firms. It complements employment rather than replacing it. The contracting pathway must therefore be addressed from qualification through award, acceptance and payment. Any stalled step may undermine continued demand even when the service is good.[16] [15]

Related Plan Programmes

This direction connects to "Empowering National Talent in the Sharing Economy" and "Accelerating Employment of Jobseekers in the Public and Private Sectors and Freelancing", led by the Ministry of Labour; "Strengthening the Local Content Ecosystem", led by the Authority for Projects, Tenders and Local Content; "Enhancing SMEs' Benefit from In-Country Value", led by the SME Development Authority; and "Building a National Ecosystem for Digital Trade and Services" and "Enabling Exports", led by the Ministry of Commerce, Industry and Investment Promotion.[126]

Market expansion sits within local-content, competitiveness and export-promotion programmes, using existing digital-industry, digital-commerce and cybersecurity pathways. The proposed addition is to identify knowledge services actually covered, address verified gaps in buyer access, contracts, qualification and payment collection, and extend access to non-technology professional services under each market's requirements.[126] [128] [135] [137] [141]

Proposed Applications within the Programmes

1. Operate the government freelancer procurement channel in selected entities and measure award and payment times, acceptance and subsequent-purchase rates, under programmes 7-1 and 7-13.

2. Review knowledge-service coverage in existing local-content instruments and mandatory lists, then add services shown to be missing and suitable for competitive procurement under programmes 6-9 and 8-15. Include service specifications, quality, acceptance and payment; do not assume all services are absent from the lists.[15] [23]

3. Complete a knowledge-service export pathway building on digital industry, digital commerce and Hadatha, connecting to other professional services where need is established, under programmes 8-6 and 8-11. Test market, professional-recognition, contracting and payment requirements, measuring actual exports separately from exhibition participation or the signing of cooperation agreements.[135] [137] [141]

What Is Measured?

Measure the number and value of delivered knowledge-service contracts, median payment days, repeat-purchase rate and the number of distinct buyers per provider. Track knowledge services' share of institutional procurement and exports when data are available. These measures show whether opportunities become sustained activity.

Not all local spending is knowledge spending. Freelancing is one option for jobseekers, not a universal solution. Government demand is a starting point whose success appears in the market's ability to diversify buyers and grow beyond it.

3

6.5 DIRECTION THREE

Strengthening Enterprise Capability and Productivity

From training detached from the enterprise to improving a specific process within it.

The priority is to connect enterprise support to improvement in a specific process or product, then measure the improvement and whether it persists after support ends. Depending on need and feasibility, choose internal capability development, a purchased knowledge service or technology adoption.

Why This Direction?

Supplier development and contract and invoice finance provide support channels, supplemented by the loan guarantee programme announced in 2026. Evidence identifies documentation, accounting-system and collateral barriers in small enterprises. Management and data needs must therefore be distinguished from financial needs. The Labour Law imposes training and performance-assessment duties on covered enterprises, while the annual-increment instrument links the minimum annual increment for Omanis in the private sector to the result of the performance report, subject to eligibility and grievance rules. Each offers a channel for improving practice within its scope.[23] [14] [20] [18] [24]

How Is It Implemented?

Begin with the process the enterprise wants to improve. Examine the work description, management, data, learning and technology required. Compare alternatives against the same outcome and determine the scale of the intervention through local diagnosis. Foreign experiments help identify what to test; their returns cannot be transferred to services of different scale or character.[18] [24] [33] [97]

Improvement includes supplier and client relationships, shared specialist services and financial and management data quality. Distinguish the need for contract or operating-cycle finance from weak business viability or delayed collection. Technical assistance and finance may complement each other where justified; neither performs the other's function.[85] [89]

Enterprise improvement meets knowledge-market development here. An enterprise purchasing a service to improve a process becomes a market client, and its provider can build repeat business. Supplier programmes can serve both by tracking changes and improvements in work alongside course attendance.

Related Plan Programmes

This direction connects to "Digital Transformation of Economic Sectors", "Deploying Artificial Intelligence and Advanced Digital Technologies" and "Empowering Omani Technology Companies", led by the Ministry of Transport, Communications and Information Technology; "Empowering Omani Industries and Raising Their

Efficiency", led by the Ministry of Commerce, Industry and Investment Promotion; and the Ministry of Labour's Tahfeez programme supporting high-performing enterprises and linking incentives to the productivity of the national workforce.[126]

Approved standards packages cover logistics, manufacturing, energy and minerals. Related programmes under "Sectors Driving Economic Diversification" include logistics connectivity (6-3), empowering Omani industries, and empowering renewable-energy sectors (6-1). The paper therefore favours these sectors for early application. The actual order of priority depends on comparing need, expected impact, readiness and cost with those of other sectors under Section 6.9's criteria.[126]

Proposed Applications within the Programmes

1. Deepen supplier programmes' connection to a defined process improvement, with baseline and follow-up measurement alongside attendance and certification, under programmes 6-9 and 8-15.[23]

   Begin by reviewing what Jadara, Numou, supplier development and financing instruments already provide. The addition to test is sustained adoption, process improvement and repeat contracts after assistance, not a new support pathway that differs only in name.[131]

2. Use training and performance-assessment obligations in enterprises covered by Article 22 to transfer practices through supply chains, under programme 7-8.[18]

3. Connect contract and invoice finance to enterprise financial-data readiness alongside collateral assessment, under programme 8-9.[14 20]

What Is Measured?

Measurement starts with process improvement and whether it persists after support ends. Productivity is measured when consistent data are available. Separately track the proportion of enterprises continuing improvements at their own expense and the proportion obtaining contracts or finance after improvement.

Box 6–2 What Controlled Experiments Teach about Enterprise Improvement

In a controlled experiment with Indian textile factories, intensive management consulting increased productivity by approximately 17% within a year. Later follow-up found some practices persisted for years. In an experiment with Egyptian carpet producers, access to foreign buyers improved quality and profits and raised technical efficiency after accounting for specification differences, through learning from buyer requirements. Both illustrate the value of improving internal practice and connecting demand with knowledge. Both interventions were intensive and costly; estimating results from lighter services requires local testing.[97 100 121]

Finance cannot replace viability. Local testing preserves the distinction between management improvement, finance provision and addressing weak business viability. Productivity gains should not be attributed to generic training or financial support without measurement suited to the intervention.

4

6.6 DIRECTION FOUR

Strengthening Research, Innovation and the Transition of Knowledge into Use

From measuring expenditure to tracking projects that reach users.

The priority is a research and innovation portfolio preserving different research purposes. For a project with a defined applied purpose, reaching an actual user becomes a principal success measure, with user involvement from design. Basic research is assessed through quality and cumulative scientific contribution.

Why This Direction?

Reported research resources expanded in 2025: OMR 189.42 million in expenditure, or 0.45% of GDP, and more researchers. In the Global Innovation Index 2026, Oman ranked 69th overall, 47th for inputs and 89th for outputs. Section 4.4 presents university and industrial capabilities and existing bridges such as EJAAD. These support monitoring research quality, transfer and use while examining coverage, timing and component data; they do not establish that there is a single barrier or that connecting channels are absent.[13] [113] [82] [150] [151]

The 2026 innovation profile describes outputs as below the level of inputs according to the index's performance relationship. This relative assessment does not measure the return on a single year's spending or isolate the cause of underperformance. Oman Vision 2040 targets remain a reason to examine actual performance and components, accounting for different data years and research horizons.[150] [101]

How Is It Implemented?

The portfolio includes basic research, research addressing public needs, applied development, knowledge transfer and institutional adoption. Each has appropriate priorities, outcomes and timeframes. Portfolio assessment should preserve these purposes rather than impose a near-term commercial return on all.[83]

Applied research identifies the user and need from the outset, tracks testing quality and operational transfer, and organises ownership, publication, licensing and incentives. Mapping begins with EJAAD, existing laboratories, centres and partnerships, then identifies missing finance, usage capability or rights agreements. Any additional transfer structure requires documented need and comparison with strengthening these channels.[102] [151]

Basic research is assessed by quality and cumulative scientific contribution within a portfolio that also includes research oriented to start-ups and competitiveness, as intended by "Developing the Research and Innovation Ecosystem". It builds understanding that may have no buyer today but opens up knowledge that society will need later.

Related Plan Programmes

The direction connects to "Developing the Research and Innovation Ecosystem", led by the Research and Innovation Authority; "Strengthening the Knowledge Economy", led by the Ministry of Education; and "Industrial and Technological Innovation" and "Activating the National Intellectual Property Plan", led by the Ministry of Commerce, Industry and Investment Promotion.[126]

Measuring knowledge reaching users serves all these programmes. The paper also informs preparation of the National Knowledge Economy Policy, whose preparatory work begins in the first work programme and drafting in the second, under programme 1-13.

Proposed Applications within the Programmes

1. Inventory existing applied-research projects by type, maturity, resources and intended user under programme 1-2.
2. Test small research and testing vouchers or contracts through which enterprises purchase defined research services, after checking existing instruments and preventing duplicate support. Measure actual testing and adoption under programme 8-8.
3. Publish ownership and licensing rules that facilitate knowledge transfer and avoid disputes, under programme 8-27.

What Is Measured?

Measure the number and proportion of applied projects reaching actual users, transition time and subsequent funding source. Continue tracking expenditure and researcher numbers with explicit data years and definitions, and follow what this capability produces and what is used. Patent or licence counts alone are insufficient.[13] [83]

Box 6–3 Innovation Vouchers: Defined Demand for Research Knowledge

Ireland's innovation vouchers give small enterprises a limited sum to purchase knowledge or services from approved research providers for a defined problem. They connect spending to enterprise needs and put purchasing power in the enterprise's hands. Success requires firms able to describe problems and research bodies able to respond promptly. The source explains instrument design rather than evaluating impact; local application should therefore begin with a pilot before expansion.[103]

The aim is to improve the performance that the indicators reflect, demonstrated through output quality and use while tracking inputs and research horizons. More spending does not guarantee outcomes, and rank changes alone do not fully reveal them. Basic-research finance remains tied to quality and scientific purposes without requiring a direct economic return.

5

6.7 DIRECTION FIVE

The Enabling Regulatory, Financial and Digital Environment

From making an instrument available to facilitating access and securing its full benefit.

The priority is to address barriers preventing users from benefiting from available instruments and services, assigning an entity to study each recurrent barrier. Examine the rule, implementation and access cost, then choose the response that helps users benefit while preserving quality and rights.

Why This Direction?

Earlier chapters describe digital progress and procedural savings, financing products, contracting and qualification channels, alongside access barriers needing verification. Responses are therefore defined for a particular journey or group: What is available? Who uses it? What changed in time, cost and quality? Differences between completion and satisfaction rates do not establish an implementation shortfall.[11 20 25]

How Is It Implemented?

Review covers professional regulation, competition, market entry, procurement, fees, compliance costs, finance, incentives, data and intellectual property. Define the barrier and scope and ask what the rule is for. Then compare changes to the rule, better implementation and improved access in terms of impact and cost.[18 71 104 74]

In finance, examine regulation, bank practice and enterprise readiness together, alongside insolvency, collateral and enforcement rules discussed in the IMF report. Identify the binding constraint and build on existing measures. Then examine ways to demonstrate creditworthiness: simple, reliable financial data, contract and invoice finance, and activity-appropriate risk sharing.[85 14 91 20 17]

For fees, track existing rationalisation and examine a structure responsive to enterprise size and activity. Assess administrative complexity and manipulation of size categories that tiering may create. Proportionate fees require clear, verifiable rules. Compliance cost is measured through the number, time and cost of obligations; digitised-service counts alone do not reveal the user's burden.

Review of integrated journeys begins with existing national digital-transformation, data, commerce and finance programme designs. Entities identify duplication, interrupted data or access barriers while preserving quality and protection. The paper adds tracking of completed transitions and cross-entity use where existing measures lack coverage, and measurement of user outcomes.[128 136]

Each recurrent barrier needs an investigating entity, justified alternatives and a route for escalating matters beyond that entity's authority. Assess effects on users, competition, rights and cost, with suitable transition arrangements. Preserve necessary safety, quality and rights requirements while improving implementation.

Related Plan Programmes

The direction connects to "Developing and Strengthening the Investment Environment", led by the Ministry of Commerce, Industry and Investment Promotion; "Developing the Financial Ecosystem to Support SME Growth", led by the Central Bank of Oman; "Simplifying Procedures and Improving Government Services", led by the Secretariat General of the Council of Ministers; "Comprehensive Government Digital Transformation", led by the Ministry of Transport, Communications and Information Technology; and "Building a Forward-Looking Regulatory Sandbox", led by the Ministry of Justice and Legal Affairs.[126]

Select journeys with demonstrated integration needs after reviewing existing digital coverage, then complete cross-entity measurement and delivery. Track completion, time, cost, visits and satisfaction by governorate and group with privacy protection.

Proposed Applications within the Programmes

1. Measure activity-licensing journeys through completion across entities and governorates, harmonising requirements and exchanging documents under the once-only principle, within programmes 12-5 and 8-1.
2. Track fee rationalisation through the user's total compliance cost for a specified journey, under programme 12-5.
3. Develop a simplified financial-disclosure template for small enterprises and connect contract and invoice finance to it under programme 8-9.

What Is Measured?

Measure journey-completion time, satisfaction with the whole journey, the proportion of financing applications accepted and the reasons for rejection. Track total compliance costs for selected journeys and the number of requirements harmonised across governorates. This reveals actual user experience alongside each entity's internal completion measures.

Safety, quality and the protection of rights remain the basis of the review. Examine the purposes, effects and costs of fees and guarantees; their existence alone does not justify abolition. Address barriers shown to obstruct outcomes without adequate justification.

6.8 DIRECTION SIX

6 National Coordination, Measurement and Learning

From completion reports to a progress dashboard distinguishing frameworks, use and outcomes.

The paper proposes national coordination that links building knowledge capability with its use in institutions and markets, and places the eight digital programmes within the wider economic picture. To determine the appropriate leadership, it recommends comparing two options: establishing a National Knowledge and Digital Economy Authority, or strengthening existing governance. Both options are tested against the same functions—knowledge-economy coordination, management of the eight digital programmes and integration of national digital transformation—and against authority, full-time leadership, resources and outcomes. Education, labour, research, regulatory and financing decisions remain with the competent entities until a decision changes this.

Why This Direction?

Several parties are involved in a standard reaching a register or employment decision and in completing activity licensing. Available sources show instruments and completion reports but do not give this paper a complete picture of monitoring every transition. This is an evidence gap, not proof that entities do not monitor. First establish what they actually track and where responsibilities need clarification or data gaps need filling.[11] [91]

How Is It Implemented?

Work starts from the existing arrangement: the Ministry of Economy, responsible for the Plan, coordinates with the Office of the Deputy Prime Minister for Economic Affairs and programme owners until the leadership model is approved. The Ministry of Education leads National Knowledge Economy Policy preparation under programme 1-13. Delivery, specialist and financing decisions remain with competent authorities. The government decision defines coordination limits and dispute resolution.[26] [111] [126]

Connect the progress dashboard to existing planning, data and financial-management instruments and keep dimensions and indicators consistent across editions. Show allocated resources, availability, use and beneficiaries, together with the quality and limitations of the evidence. Private-sector, scientific, professional and beneficiary participation in interpretation and review combines measurement with practical experience.[11] [91] [105]

The proposed rule is clear: every handover point has a known owner. Before any initiative or project is approved, prepare a dossier specifying need, alternatives, feasibility, rights, indicators and conditions for continuation or stopping.

Related Plan Programmes

This direction connects to the Ministry of Economy's "Managing Data and Information Supporting Economic Decision-Making" and "Supporting Improvement in Oman's Performance in International Competitiveness Indicators", including the Global Innovation Index.[126]

Review Plan indicators and add missing use measures to the economic decision-data system. The international-indicators programme supports examination of the relationship between innovation inputs and outputs. Rank differences prompt study of how resources and capabilities become results; locating and explaining barriers requires other evidence.

Proposed Applications within the Programmes

1. Map programmes against the six directions and identify handover points requiring improvement, their owners and data under programme 5-3.
2. Use the progress dashboard in Section 4.12 as the starting point for reviewing use measures in the economic decision-data system under programme 5-3. Fill gaps in the coverage of approved indicators in coordination with the National Centre for Statistics and Information.
3. Require the programme dossier in Table 7–3 for every initiative or project within relevant programmes.

What Is Measured?

Count handover points with designated owners and published measures, then verify completion through Table 7–2's receipt and use evidence. Measure the proportion of initiatives and projects approved with complete dossiers, how regularly the dashboard is updated and the share of indicators measuring outcomes. A responsible owner is a coordination prerequisite; effectiveness is shown by what reaches and is used by the recipient. When the two leadership options are compared, time to resolve joint decisions and coordination cost are measured in the same way for both.

6.9 Criteria for Selecting Programmes and Applications

Select programmes and applications using published criteria. Each programme dossier explains why the programme was selected, the alternative it was compared with and what could alter the preference. Low-risk measures with a clear need can begin before every data gap is closed; broad commitments still require evidence of feasibility.[38] [98]

Table 6–2 **Criteria for Selecting and Preparing Programmes and Applications**

Criterion	What the dossier shows	Effect on the decision
Importance and scope	The scale of need, groups, sector, public benefit and supporting evidence.	Prioritise the need with the greatest impact, not the one easiest to describe.
Additionality and alternatives	What is expected under continuing arrangements and why improving an existing instrument is insufficient.	Choose what adds value and avoid duplicating programmes.
Readiness and prerequisites	Authority, a capable owner, data, delivery capability and conditions for use.	Begin where readiness permits or complete prerequisites in parallel.
Feasibility and fiscal implications	Life-cycle costs, financing, commitments, alternatives and risks.	Obtain financial approval before commitment.
Competition, fairness and rights	Beneficiaries and potential exclusions, with safeguards for selection, data and grievances.	Adjust design and protect groups, looking beyond average outcomes.
Measurement and continuity	Indicators, baseline, decision thresholds and the post-support operating plan.	Proportionate testing followed by expansion, modification or termination according to results.

6.10 What Starts Early, What Continues and What Is Tested?

Entities begin by mapping existing programmes to the directions and identifying transition points that need improvement and can be worked on, together with the associated responsibilities and data. In parallel, complete conditions for using standards and recognising competence, develop demand and improve enterprise practices. Mapping serves decisions; useful measures with clear needs can proceed alongside it.

Work on education and scientific capability continues, while applied projects begin when prerequisites are met. New instruments that depend on assumptions with significant consequences are tested at a suitable scale before commitments expand. Scale and finance follow need and capacity, then are reviewed against quality, outcomes, cost and fairness.[38] [98]

This sequencing concerns timing and commitment type, not spending shares. Resource estimation and sectoral allocation belong to implementing entities and the Ministry of Finance through approval procedures.

6.11 The Overall Recommendation, Proposed Decisions and Submission Route

The paper recommends adopting the six directions as a reference framework for strengthening the knowledge-economy transition within Oman Vision 2040, delivered through approved strategic programmes in the Eleventh Five-Year Plan to 2030. The proposal rests on an integration and measurement package that con-

nects programmes, assigns handover responsibility and tracks use of their achievements. Initiative preparation examines feasibility and fiscal implications before commitment, followed by periodic delivery review. The paper proposes studying two options for leading this package: a National Knowledge and Digital Economy Authority, or strengthening existing governance.[126 2]

Decisions Proposed for Consideration

1. Adopt the six directions as a reference framework for integrating relevant programmes in the Eleventh Five-Year Plan, and direct the preparation of a comparative study of the two institutional leadership options: establishing a National Knowledge and Digital Economy Authority, or strengthening existing governance. The study determines whether management of the eight digital-economy programmes and leadership of national digital transformation integration should be assigned to the authority, wholly or partly, and maps functions, mandates, budgets, service and data ownership, and baselines for decision time, coordination cost and programme outcomes. The legal, financial and implementation findings are presented to the competent authorities before the model is approved, in line with Section 7.2.[2 126]

2. Commission the comparative study through the Office of the Deputy Prime Minister for Economic Affairs, with the participation of the Ministry of Economy and the competent entities. The Ministry of Economy, as the entity responsible for the Plan, continues to coordinate handover points between programmes and monitor their indicators under existing arrangements. Once an option is approved, a clear legal instrument designates the coordinating body and its functions, preserving sectoral and legal responsibilities.[26 111]

3. Review approved programme indicators and add missing use and inter-programme transition measures to Plan monitoring through "Managing Data and Information Supporting Economic Decision-Making" (5-3), in coordination with the National Centre for Statistics and Information.

4. Designate a lead entity for every handover point based on the proposed allocation of lead responsibility in Table 7–2, defining supplier and recipient roles and verification of use. Cover standards and the national register, competency evidence and employment decisions, cross-entity activity licensing, and fees and compliance costs. Any subsequent organisational decision specifies which coordination, digital-portfolio management and data functions would be assigned to the authority if it is established, without changing professional, financial or regulatory decisions without a legal basis.

5. Require a dossier for every relevant initiative or project under Table 7–3, covering need and evidence, alternatives, responsibility and authority, feasibility and fiscal implications, rights, indicators and decision thresholds.

6 Begin preparatory work for the National Knowledge Economy Policy during the first work programme (2026–2027), under "Strengthening the Knowledge Economy" (1-13), led by the Ministry of Education. Prepare the evidence base and development dossier for drafting in the second work programme (2028–2029), then submit for approval and implement approved measures. Preparation thus precedes drafting while the approved timetable remains unchanged.

7 Assign the Ministry of Labour, in coordination with the entities responsible for employment systems, to develop a national framework for assessing individual competencies in appointment and promotion. The framework should build on approved occupational standards and the Ejada system, begin with the competency component of the flexible promotion pathway, and, once approved, be tested in government occupations with complete standards during the first work programme (2026–2027), as described in Appendix V.

These decisions are proposed for discussion and determination by competent authorities. Implementation and financial commitments require the prescribed approvals.

The seven decisions bring together adoption, coordination and monitoring across the twenty-eight primary programmes. Table A4–3 classifies fourteen detailed proposals as activation, expansion, instrument development or new approval. They overlap with the seven decisions, so common requests are not counted twice and proposals are not automatically treated as new programmes.

The paper contributes to policy discussion. Its applications are put to competent authorities to verify need, suitability and feasibility before approval. The 2028 follow-up will update evidence and examine use and outcomes with the same dimensions and definitions.



07

CHAPTER 7

Governance and the National Roadmap

Connecting Existing Programmes, Assigning Responsibilities and Monitoring Delivery

IN THIS CHAPTER

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7.1 From National Directions to an Integration Package within the Plan

The six directions require policies, programmes and resources to work towards intended outcomes. Each entity starts by defining its deliverables, what it needs from others and who receives its results. Agreement on purpose then becomes work that can be monitored.

The integration package frames cross-entity work through approved Eleventh Plan programmes. It identifies suitable initiatives, work to be completed and overlaps to be removed, while education, labour, research and finance policies remain with their responsible entities. Coordination arrangements are chosen according to the functions required and the capability available, without assuming every challenge needs a separate organisation.

The package draws on the National Employment Policy, National Occupational Standards Strategy and the Oman Qualifications Framework, alongside education, research and digital-economy plans and the demand and financing channels described earlier. Each initiative identifies what it completes or connects within existing programmes, with policy responsibility unchanged.[7] [4] [29] [48] [14]

Begin by comparing directions with entity plans: Which programmes already serve them? Where does work stop between entities, duplicate an instrument or fail to reach those needing a service? Identify what should change, expand or be added. Integration should increase existing work's benefits and improve cost efficiency, not merely rename it.

During the preparatory phase, the integration package operates through existing entities. If the national authority is established with appropriate powers, the coordination and digital-portfolio management functions specified in its founding instrument are assigned to it; sectoral decisions do not. If strengthening existing governance is preferred, the package continues through the mechanisms of that governance once strengthened.

7.2 Leadership, Coordination and the Two Institutional Options

The knowledge and digital economy system now spans programmes across many entities and mandates, touching learning, research, markets, productivity and services. These programmes need horizontal coordination and executive leadership that turns them into results. Any arrangement depends on two conditions together: an entity with the mandates and resources to act, and capable, dedicated senior leadership that is accountable. An entity without competent leadership raises expectations without delivery capacity; leadership without an authorised entity encounters limits of authority. This section therefore weighs two options, assuming neither that organisational independence is superior nor that the existing arrangement suffices without testing.[26] [126]

Option A: A National Knowledge and Digital Economy Authority

This option involves establishing a national authority with defined legal mandates, if it proves worthwhile. If its establishment is approved, the authority would lead national coordination of the transition to a knowledge economy. The comparative study determines whether assigning management of the eight digital-economy implementation programmes, and coordination and leadership of national digital transformation integration, to the proposed authority would add value, compared with keeping these functions within the existing institutional system once its powers and capabilities are strengthened. The study considers three possible scopes for the authority: transferring management of the whole portfolio, transferring some of its functions, or assigning strategic coordination and leadership to the authority while executive programme management stays with current entities. These are scopes for defining the authority's mandate within Option A, not additional institutional options. The scope of mandates, delegation and resources is settled on the basis of the study's findings and the competent government decision. The authority would exercise its functions with service-owning, regulatory and sectoral entities; their legal powers would not transfer automatically. Its oversight arrangements and relationship to the highest level of economic coordination would be studied, including the Office of the Deputy Prime Minister for Economic Affairs established by Royal Decree 7/2026, with full-time executive leadership and clear authority over decisions, escalation, resources and data. The option does not abolish other entities' regulatory, educational, research or financial mandates; it identifies the overlaps that need resolving, what could transfer and what stays with its current holder.[111] [26]

Option B: Strengthening Existing Governance

This option retains existing entities, committees, offices and programmes, including digital-economy governance with its technical committee, Technology Programmes Office and programme management teams. It strengthens their effectiveness through a clear government mandate, full-time leadership, resources and a multidisciplinary team. It adds agreements to complete handover points, a schedule for resolving shared issues and a dashboard of outcomes and costs. An executive office with defined powers may operate within it as a tool, not a third option. Its relationship with the Ministry of Economy and the Office of the Deputy Prime Minister for Economic Affairs is defined without duplicating programme offices or creating conflicting mandates.[128]

> *Any arrangement depends on two conditions together: an entity with the mandates and resources to act, and capable, dedicated senior leadership that is accountable.*

Comparison and Conditional Preference

The two options are compared on how well they perform the same functions, against these criteria: need and expected impact; authority; quality of leadership; establishment, transition and operating costs; risks of duplication and service disruption; protection of rights and data; time to reach decisions; and verifiable outcomes. Option A receives priority for institutional examination as a broad strategic option, not a prior finding that it

performs better. The eight digital economy programmes span four entities, and the launch announcement sets substantial 2030 targets: OMR 1.5 billion in direct GDP contribution and 3,000 direct jobs annually.[154] The number of entities and scale of targets justify examining the model; neither proves shortcomings in current governance or the superiority of a new authority. Option A becomes a recommendation to establish the authority only if its added value over Option B is demonstrated and the legal instrument, resources and transition plan are in place. Programmes and work that are ready continue during the study.[128] [129]

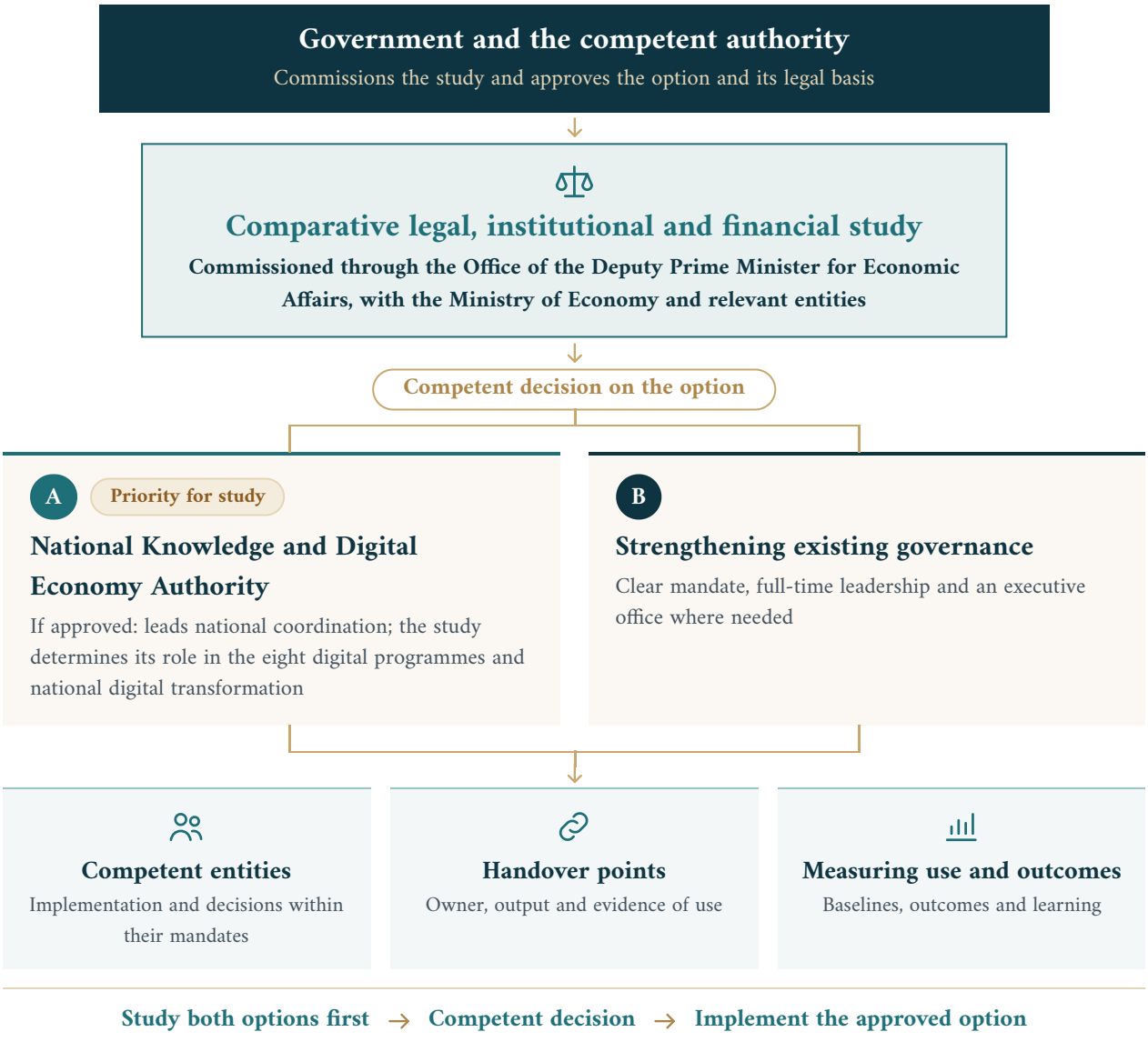
Box 7–1 Two Institutional Leadership Options for Comparison before Approval

Criterion	A Establish the national authority	B Strengthen existing governance
Mandate	Leading national coordination of the knowledge economy; and such management of the eight digital programmes and national digital transformation integration, wholly or partly, as the study supports, within the founding mandate and delegation.	Programmes and services remain with current owners, supported by delegated joint leadership and stronger links between outputs and decisions.
Decisions	Institutional powers with clear limits and accountability, set by the legal instrument.	Delegation to resolve or escalate conflicts by a set deadline.
Leadership	A full-time chief executive, team and resources, with a transition plan.	A full-time lead, a multi-entity team and adequate resources; may operate through an executive office with defined powers.
Potential benefits	Potential for unified portfolio management and accountability and stronger links between knowledge and application, if evidenced.	A quick start, retained capabilities and lower transition costs.
Risks	Overlapping powers, establishment costs, transfer of data and contracts, and possible duplication.	Continued fragmentation and slow decisions if delegation remains weak.
Policy and decisions	Education, labour, financial and regulatory decisions stay with competent bodies; the authority coordinates policy alignment without taking sectoral decisions.	Decisions remain with competent bodies, supported by joint agreements and escalation deadlines.
Budgets and service ownership	Transferred or allocated budgets and service owners are specified by the founding instrument; finance and service operations do not transfer automatically.	Entities retain their budgets and services, with duly approved shared coordination resources.
Programme management and evaluation	The authority manages its delegated portfolio and monitors delivery; impact evaluation remains independent and coordinated with statistical bodies.	Programme owners manage delivery under common monitoring and independent evaluation with consistent measures.
Decision rule	Adopted if added benefits demonstrably exceed establishment and transition costs.	Adopted if the same outcomes can be achieved with fewer resources and lower risk.
Comparison measures	Decision time, completed handovers, use, administrative cost and programme outcomes.	The same measures, for a fair comparison.

Existing Responsibilities Do Not Transfer by Proposal Alone

Preparation of the draft National Knowledge Economy Policy remains with the Ministry of Education under programme 1-13; planning and Plan-monitoring functions remain with the Ministry of Economy; and education, labour, research, financing, regulatory and licensing decisions remain with their competent entities. If establishing the authority is chosen, its founding instrument defines portfolio-management, transition-coordination, transferred, shared and retained mandates, when they take effect, and responsibility for transferring resources, data and contracts. The two options in Box 7–1 are under study; they are not decisions to establish a body or transfer mandates. The decision rests with the competent authority.

Figure 29 **The Path to Choosing the Institutional Leadership Model**



Section 7.2. Two options under study, not a decision to establish a body or transfer mandates. Current responsibilities continue until a competent decision is issued.

7.3 Allocating Responsibilities across Entities

The table identifies delivery functions and relevant entities as a basis for preparing initiatives and matching roles to actual mandates and capabilities. It presents proposed national responsibilities; selecting a provider, buyer or beneficiary for a particular contract remains within the appropriate process.

Table 7–1 **A Proposed Framework for National Responsibilities**

Function	Relevant entities by mandate	Required outputs during initiative preparation
Set direction and decide on the integration package	Government, through prescribed decision and approval routes.	Approved directions, responsibilities and clear accountability boundaries. The paper itself is not a procurement instruction.
Economic and planning coordination	Ministry of Economy, in coordination with the Ministry of Finance and sectoral entities. [26]	A shared work programme, connected priorities and requirements, and outcome reports.
Education, competence and use	Ministries of Education and Labour, quality-assurance and occupational authorities, educational institutions and skills units. [58] [18]	Connected learning, recognition, assessment and use pathways within each mandate.
Markets, productivity and finance	Trade, investment, enterprise and sectoral bodies, financial authorities, finance providers and buyers. [106]	Market-access policies, enterprise capability development and finance suited to the need, with independent credit decisions.
Research, innovation and knowledge transfer	Research and Innovation Authority, research institutions, universities and knowledge users. [58]	Diverse research portfolios, testing and usage opportunities, and clear rights.
Procurement, services and data	Service owners and authorities responsible for procurement, digitalisation, data and statistics. [90] [104]	Procurement conditions, service quality, traceable definitions and indicators, and legally grounded data connections.
Partnership and review	Private sector, professional associations, beneficiaries and independent specialists.	Documented needs, checks on implementation feasibility, and review of outcomes and interests.

The national coordination lead function may be reassigned once the institutional option is approved. The paper does not imply reassigning the lead entities of approved programmes.

◆ Transitions Requiring Shared Responsibility

Each transition needs a coordinator, supplier, recipient and evidence of completion. The proposed lead coordinates the case; occupational, educational and financial decisions remain with authorised bodies. During preparation, the lead reviews mandates, each party names one contact unit, and both agree receipt deadlines and escalation procedures.

Table 7–2 **Handover Points: Proposed Leads, Parties, Outputs and Completion Evidence**

Demand → Occupational description 7-2

PROPOSED LEAD

Ministry of Labour, coordinating with the relevant sector skills unit.

SUPPLIER AND RECIPIENT

Employers and the sector describe the need; the skills unit develops the standard; the approval authority receives it. [18] [4]

REQUIRED OUTPUT

A described need, an updated standard within its scope, and clear use conditions.

PROPOSED EVIDENCE OF COMPLETED TRANSITION

Needs and consultation records; a dated standard identifying the approval authority; evidence of availability to relevant parties.

Standard → Programme and qualification 7-2 → 1-1, 1-5

PROPOSED LEAD

Ministry of Education to coordinate the educational programme component, preserving the competent training entity's responsibility.

SUPPLIER AND RECIPIENT

The skills unit supplies requirements; the education or training body connects them to outcomes and assessment; quality authorities review within their powers. [3] [22]

REQUIRED OUTPUT

Task-linked learning outcomes and assessment, with the qualification level and rights it confers.

PROPOSED EVIDENCE OF COMPLETED TRANSITION

An alignment matrix approved by competent authorities, programme and assessment versions, and evidence of qualification approval or listing where required.

Learning or experience → Competency evidence 7-2, 7-8

PROPOSED LEAD

Ministry of Labour for the proposed occupational assessment pathway; a separate lead is named for educational recognition where used.

SUPPLIER AND RECIPIENT

Practitioners provide learning and experience evidence; qualified assessors evaluate it; quality and recognition bodies verify according to purpose. These functions remain distinct from study admission or prior-learning credit. [30] [31]

REQUIRED OUTPUT

Documented, verifiable performance evidence, with grievance procedures and no unnecessary retraining or reassessment.

PROPOSED EVIDENCE OF COMPLETED TRANSITION

An assessment file identifying standard, evidence and result; appropriate independent verification; grievance and reassessment records.

Competency evidence → Practice and use 7-2 → 7-1

PROPOSED LEAD

Ministry of Labour for approved employment pathways, with a person responsible for use at each employer or buyer.

SUPPLIER AND RECIPIENT

The assessment body supplies evidence; the licensing authority decides where required; the employer or buyer determines use under its decision authority. [18]

REQUIRED OUTPUT

Clear eligibility and an opportunity for work or contracting, without an automatic promise of employment or promotion.

PROPOSED EVIDENCE OF COMPLETED TRANSITION

An eligibility or licensing decision where required; an appointment decision or contract referring to competency evidence; verification of task performance.

Use → Outcome and learning 5-3

PROPOSED LEAD

The Ministry of Economy in the current phase, then the body designated by the decision approving the institutional option.

SUPPLIER AND RECIPIENT

The user entity and beneficiary supply outcome data; the measurement owner verifies quality; standards and programme developers receive it.

REQUIRED OUTPUT

Quality, continuity, income or productivity according to purpose, with feedback for standards and programme development.

PROPOSED EVIDENCE OF COMPLETED TRANSITION

Monitoring records linked to a defined cohort and period; evidence of receipt by the relevant entity; documented decisions on what to change or retain and why.

Competency evidence → Register entry or framework linkage 7-2 → 1-1

PROPOSED LEAD

Oman Authority for Quality Assurance of Education, proposed to coordinate the certification pathway.

SUPPLIER AND RECIPIENT

The Ministry of Labour and skills units describe the competence certificate and assessment evidence; the framework authority decides on registration or linkage and its conditions. [5] [22]

REQUIRED OUTPUT

A decision specifying the certificate pathway and conditions for registration or framework-level linkage, clarifying certificate, qualification and licence relationships without merging their effects.

PROPOSED EVIDENCE OF COMPLETED TRANSITION

A published decision specifying the pathway and conditions, and a record of cases in which it has been applied. An application alone is not completed registration.

Competency evidence → Government appointment and promotion 7-2 → 12-4

PROPOSED LEAD

Ministry of Labour coordinates the reference; employment decisions remain with the authorised unit.

SUPPLIER AND RECIPIENT

Skills units provide the standard; State Administrative Apparatus units use it in job descriptions, assessment and decisions. [21] [122]

REQUIRED OUTPUT

A job description with a competency specification based on a completed standard where available, and recognised competency evidence in employment pathways.

PROPOSED EVIDENCE OF COMPLETED TRANSITION

Updated job descriptions, decision files showing actual evidence use, and time from assessment to decision.

Activity licensing → Completion across entities and governorates 8-1, 12-5

PROPOSED LEAD

Ministry of Commerce, Industry and Investment Promotion for the selected business journey, with a service owner named at approval.

SUPPLIER AND RECIPIENT

Licensing, requirement-setting and municipal entities participate; each approval's supplier and recipient are identified, with one journey-monitoring owner. [11]

REQUIRED OUTPUT

Harmonised requirements where rules permit, documents supplied once and lawfully exchanged, and published completion times.

PROPOSED EVIDENCE OF COMPLETED TRANSITION

An entity-approved journey map; records of application transfers and of time spent processing, waiting and completing missing requirements; final decisions and pending cases visible in monitoring.

Multiple fees → Published compliance cost 12-5

PROPOSED LEAD

Ministry of Finance, in coordination with economic and collecting entities.

SUPPLIER AND RECIPIENT

Collecting bodies supply fees and obligations; financial and economic bodies review them; users receive the total-cost picture. [67]

REQUIRED OUTPUT

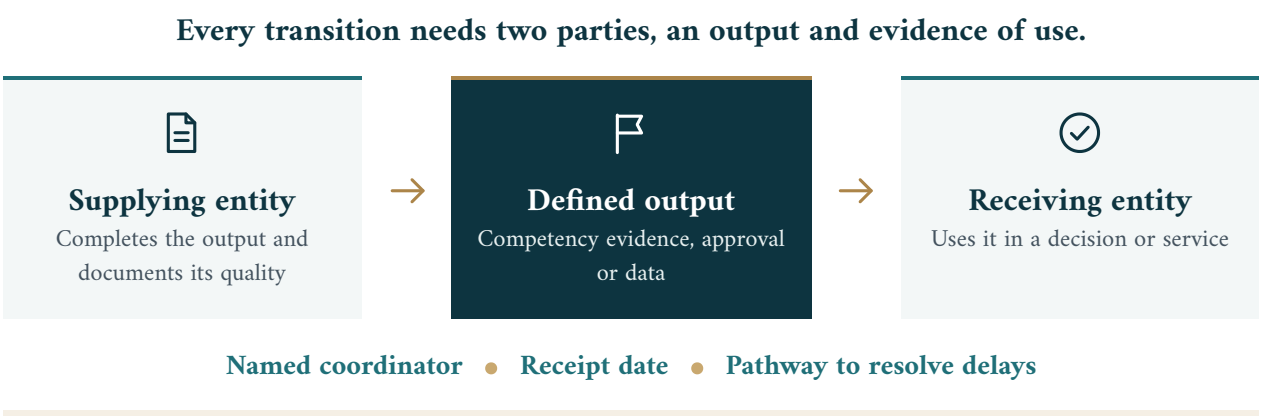
A reviewed fee list, total compliance cost for a selected journey, and a process for consolidating charges where duplication is unjustified.

PROPOSED EVIDENCE OF COMPLETED TRANSITION

A list of fees and their basis; user time and cost calculations; reasoned decisions to reduce, merge or retain charges.

The competent authority confirms the lead and handover parties in the application dossier before work begins. The table proposes responsibilities and verification methods; they have not thereby become binding assignments or concluded agreements. Each occupation uses the appropriate pathway. Study admission, prior-learning credit, basic research and general education have rules and purposes extending beyond professional licensing.

Figure 30 **Handover Points, Responsibility for Transition and Evidence of Use**



Summary of Section 7.3 and Table 7–2. Responsibilities and legal authority are reviewed when each application is approved.

7.4 Partnerships that Support Decisions and Preserve Clear Roles

The proposed participation involves stakeholders in decisions they can improve: describing need, defining quality, estimating delivery capacity, understanding access conditions and expected effects. Participants include government entities, employers, education and research institutions, professional bodies and beneficiaries, and gives a voice to groups that find it hard to reach decision-making circles.

Consultation helps verify demand, capacity, cost and rights and understand where work stalls between entities. Users, practitioners and educational, financial and regulatory entities participate. Agreements, disagreements and resulting design changes are documented.

This edition involved no new field consultations. References to policy launches and sector participation describe published events. Entities' views on this paper's recommendations should be sought during application preparation. The study of the two leadership options includes structured consultations with technical and regulatory bodies, the private sector, education and research institutions, and beneficiaries, recording dissenting views and conflicts of interest; these entities' agreement is not assumed in advance.

The preparing entity selects participants through published criteria independent of connections to the author or a provider. Professional expertise informs policy design while participation remains separate from competition to deliver services, with proportionate review and grievance routes.

7.5 The Programme Dossier and Feasibility Study

The proposed approval process requires a dossier for each initiative or project submitted for approval under the directions. It explains what the proposal will add, why it is needed and how it will work, beginning with supporting policies, standards, qualifications and financing and procurement channels, then specifying what will be completed or changed.

The proposing entity checks eligibility, authority and beneficiary rights before selecting a provider or technology. Where two entities' requirements conflict, the conflict is documented and the party with authority to resolve it is identified, avoiding repeated requests for the same evidence.

Table 7–3 **Programme Dossier: Requirements for Initiative or Project Approval**

Component	What the preparing entity should explain
Problem and outcome	Group, activity, scope, scale of need and evidence, and the outcome connecting the programme to the national direction.
Alternatives and additionality	Compare continuing existing arrangements with improving or redesigning them or adding an instrument, explaining how the option produces the outcome.
Responsibility and authority	Mandates, approvals, lead entity, partners and legal prerequisites.
Operations and capability	The service or instrument, channels, resources and sustainability, using a mission or business model where appropriate.
Feasibility and fiscal implications	Total cost, commitments, funding source, alternatives and risks, coordinated with competent financial entities.
Quality and rights	Selection and procurement safeguards, data protection, intellectual property, safety, grievances and conflicts of interest.
Measurement and expansion decisions	Baseline, targets, outcome indicators, conditions for progression, modification or stopping, and evaluation method.

The dossier complements Table 5–4's appraisal requirements: appraisal tests the option, while the dossier sets out the conditions for submitting it for approval and responsibility for delivery. Design, financial estimation and evaluation proceed together. Changes in cost, capacity or contracting conditions trigger renewed comparison before commitment.[38]

Costs cover the full cycle: preparation, operation, quality, monitoring, updating and exit. The dossier identifies existing and additional funding, shared resources and beneficiary time. It answers two distinct questions: Can the budget afford the cost? Do economic and social benefits justify using these resources?[38]

A dossier for studying the establishment of the national authority differs from an implementation initiative dossier. It requires a draft founding instrument; a responsibility matrix identifying policy-setter, budget holder, service owner, regulator, programme manager and evaluator; staff, contracts, assets, systems and data; the leadership and delegation model; life-cycle costs; a transition plan that prevents service interruption; and a comparison with the results of strengthening existing governance.

7.6 A National Roadmap to 2030

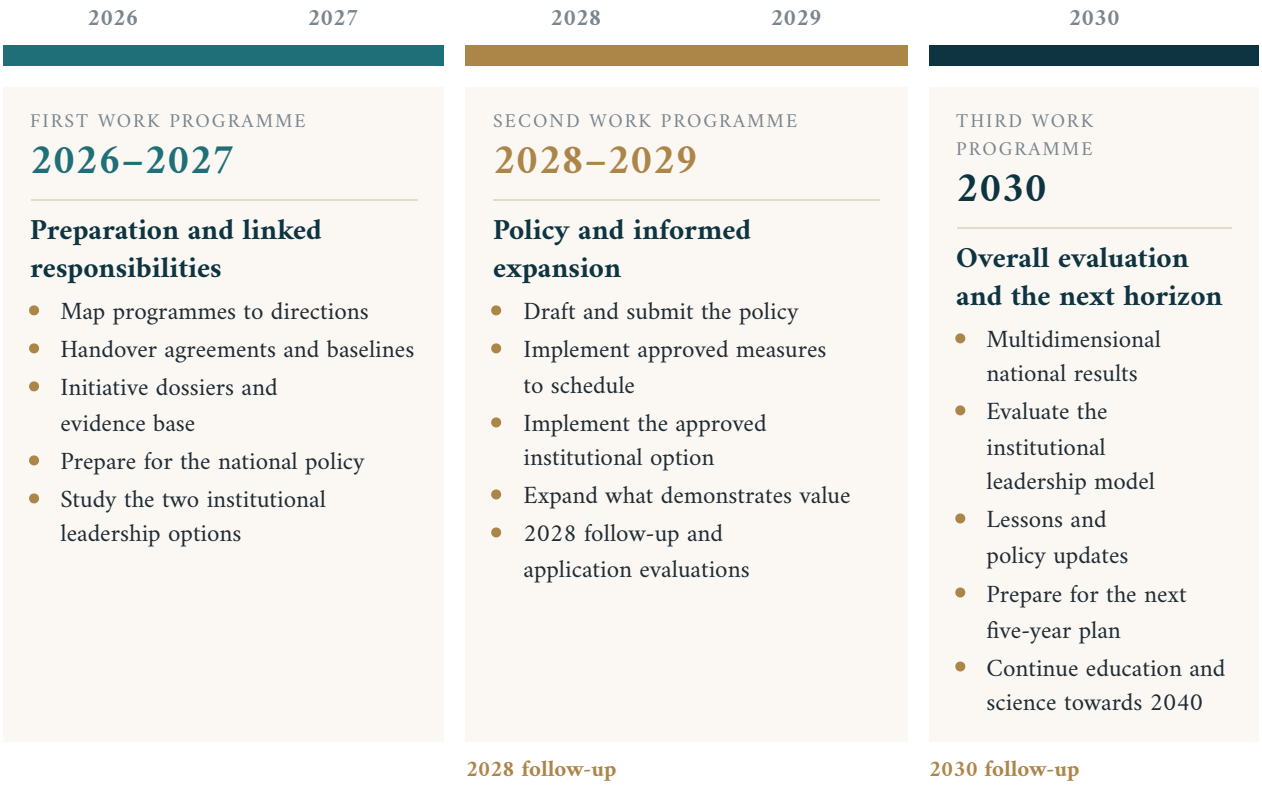
The proposed roadmap follows the three work programmes of the Eleventh Five-Year Plan. Education and scientific capability development continue towards 2040. Each period has a verifiable output; application durations are reviewed at approval against quality, capability and resources. Future approvals remain conditional on competent authorities issuing them.[2] [126]

Table 7–4 **Work Required across the Plan's Three Work Programmes**

Period	Proposed work	Interim output	Evidence of completion
2026–2027 First work programme	Map programmes to directions; select handover points; prepare agreements, early-initiative dossiers and baselines; prepare the evidence base and national-policy development dossier; prepare the comparison of the two institutional leadership options and a map of powers.	A responsibility map, named transitions, indicator sheets and dossiers for initiatives entities decide to pursue; a comparative study of the two leadership options submitted to the competent authority.	A participant-approved map; each transition's parties and output recorded; indicator sheets showing values and gaps; dossiers covering feasibility, rights, resources and thresholds.
2028–2029 Second work programme	Draft and submit the national policy under 1-13, implement approved measures on schedule, expand viable applications, implement the approved institutional option once its decision is issued, with conditional phased transfer if the authority is established, and publish the series' second follow-up.	A policy draft submitted to the competent authority and decisions on it; reasoned expansion dossiers; the 2028 follow-up and appropriate application evaluations.	The draft and submission evidence, followed by the approval decision and the implementation plan for approved measures, once issued. Expansion or modification decisions are documented with evidence of outcomes, quality and cost.
2030 Third work programme	Evaluate results and the institutional leadership model, draw lessons and prepare for the Twelfth Five-Year Plan, while education, science and long-term transformations continue to 2040.	Multidimensional national results, lessons and recommendations for policy updates and the next planning period.	A comparison report preserving indicator definitions and limits; a record of what continued, changed or stopped and why; inputs submitted through the preparation process for the next Plan.

Work begins in 2026–2027 with the evidence base and the policy-development dossier. Drafting starts in 2028–2029 under programme 1-13, followed by submission for approval and implementation of any approved measures on schedule. Preparation is distinct from policy approval. Other work proceeds in parallel when conditions are met or sequentially where a step requires prior authority, capability or results. The study of the two leadership options begins in 2026–2027, and the chosen option is implemented only after its decision is issued. This does not change the Ministry of Education's responsibility for drafting the policy in the second work programme.

Figure 31 **The Proposed Roadmap to 2030**



Section 7.6. Proposed phases within the Plan's horizon; actual implementation periods begin from the approval date.

7.7 Finance and Procurement

Competent entities prepare feasibility studies and fiscal-impact assessments and identify funding sources. These are reviewed through prescribed routes, in coordination with the Ministry of Finance where necessary. Options include redesigning an existing instrument, justified reallocation or new funding. Costs and commitments are presented before approval. Policy changes may require resources; adequacy must be checked across all directions.

Procurement, incentives, finance and research each have their purposes, eligibility and risks. Before requesting new resources, identify funded activities already serving the direction and additional instruments needed for a defined barrier. Distinguish parties' payments from the economic value sought.

Education, basic research and quality-assurance resources should be preserved in multi-year planning and reviewed for suitability, outcomes and spending efficiency. Their importance demands accountability, not automatic diversion to applications with quicker returns. Expansion funding follows outcomes, affordability and existing commitments. The paper proposes no financial figure or budget share for the proposed authority ahead of a feasibility study. Establishment, transition and operating costs and the risks of duplicated functions are calculated and compared with the cost of strengthening existing structures, while protecting education, research and programme allocations from cuts.

7.8 Quality Assurance and Protection of Rights and Data

Quality begins in design: connect the reference to the task, provide qualified assessors, proportionate independent review, correction and grievance procedures. Programme owners balance entry requirements against occupational risks, assessment costs and access time, separate training from eligibility judgements, manage conflicts of interest and prevent unjustified provider preference.

Entities collecting or linking data first define purpose, scope, legal basis and responsibility, then control access, retention and publication and examine applicable protections and exceptions. Replacing a name with a number does not anonymise the data if the number can still be linked back to the person. Prefer aggregate data or lawful limited linkage and collect only personal information actually needed for the outcome. In any institutional transition, the rights of service users and staff, contracts and service quality are protected, and the legal basis for transferring any data or powers is defined, without the proposed authority becoming an oversight body over decisions that belong to independent entities.[57] [74]

7.9 Accountability for Outcomes and Programme Continuity

Periodic monitoring is proposed, showing entity achievements, what reaches beneficiaries, outcome changes and matters needing joint decisions. The coordinator sets timing and recipients within Plan and budget cycles, using Table 7–2's handover evidence to avoid parallel reports on the same work. Reporting should serve decisions. Baselines, observation periods and units of account are specified for time to resolve disputed points, the share of handover points completed and used, coordination cost and service continuity during any transition; the same definitions are used for both options. Establishing the authority or the number of its meetings does not count as economic impact.

Government planning, evaluation and data tools and programme and performance budgeting can connect resources to outputs and outcomes where appropriate. Record the connections already in place and those being developed and explain how findings change the programme. The standard is better services and decisions; re-

naming a budget line or creating a dashboard alone does not establish improvement.[11] [91]

Before an application becomes a continuing service, define its owner, resources, asset and data rights, and update and maintenance needs. Before expanding to another sector or governorate, examine need, capacity, cost and fairness. Local results inform the decision but suitability to the new scope requires verification.

7.10 What Is Submitted for Approval?

An action plan is submitted for approval, identifying initiatives, responsibilities, prerequisites, resources and expected outcomes. It distinguishes what the entity can prepare within existing programmes from matters needing government, regulatory or financial decisions. The dossier remains necessary to understand additionality and feasibility before commitment. The dossier for the study of the two options and its comparative recommendation is submitted first, including a reference scenario representing the continuation of current arrangements (not a third institutional option), a mandate map, life-cycle costs, transition risks and a pre-change performance baseline. If establishing the authority is preferred, its draft founding instrument, the mandates and resources proposed for transfer to it, and its transition plan are submitted separately. Approving the study of the two options is not approving the authority's establishment.

The seven proposed decisions in Section 6.11 bring together adoption, coordination, measurement and policy preparation in a single reference. Appendix IV details proposals needing approval and their overlaps with these decisions; it is not a separate additional list. After approval, delivery data return to competent authorities to correct choices or adjust scope.



08

CHAPTER 8

National Measurement Framework, Impact Evaluation and Learning

Establishing What Changed, What Programmes Added and What Should Be Adjusted

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8.1 Measuring the Transition beyond Counting Initiatives

The transition is measured to understand how the economy's ability to produce and use knowledge evolves and what policies and programmes add. The Chapter 4 dashboard provided a national picture of progress with specified reference dates. This chapter explains how ongoing measurement and interpretation inform continuation, modification or expansion.

It is proposed that this measurement be integrated into Plan monitoring. The programme volume refers to indicators but does not present them, so they must first be reviewed for coverage of output use and inter-programme transitions. Gaps can then be filled under the "Managing Data and Information Supporting Economic Decision-Making" programme. International indicators serve the international competitiveness indicators programme. Judging existing measures' adequacy requires seeing them first.[126]

The framework answers three connected questions: Is the economy's capacity to produce and use knowledge improving? Where do sectors and groups show progress or difficulty? What did selected programmes add beyond what would otherwise have happened? Each needs its own data, so national measurement branches into sector, occupation, governorate and programme measures.

Competent entities finalise definitions, baselines and targets. Before national percentages are published, classifications of knowledge activities and knowledge occupations are settled with statistical and sectoral authorities. Statistical measurement needs these definitions; the label "knowledge economy" alone does not create it.

8.2 Three Connected Levels of Accountability

Table 8–1 **Measurement Levels and Their Functions**

Level	What is measured?	How it informs decisions
National	Productivity, work, income, research activity, innovation, services trade and public-service quality under approved definitions.	Shows the transition's direction and distribution of benefits in the context of economic conditions and other policies.
Sectoral, occupational and geographic	Skills use, enterprise capabilities, demand, knowledge transfer and access to opportunities and services by sector, occupation, governorate and group.	Identifies gaps requiring review of policy priorities and programmes.
Programme and application	Readiness, access, operation, quality, outcomes, costs and the additional impact of the intervention.	Supports continuation, redesign, expansion or stopping under predefined conditions.

The national level shows the overall direction; sectors, groups and locations show its distribution. Programme measurement connects an intervention to outcomes and a reference scenario, clarifying its place in the overall trend and estimating its contribution without attributing all national change to it.

Figure 32 **Three Levels of Measurement and Accountability**

	What is measured	What it informs
National	**Productivity, work, income, research and services**	**Direction of transformation and distribution of benefits**
Sector, occupation and location	**Skills, enterprises, demand, knowledge transfer and access**	**Identify gaps and review priorities**
Programme and application	**Operation, quality, outcome, cost and additional impact**	**Continue, improve, expand or stop**

Summary of Table 8–1. Each level addresses a different question; national trends are not attributed to one intervention without suitable evaluation.

Qualifications, standards, trainees and jobs have different meanings and units and are not combined into one progress indicator. National improvement may coincide with a programme while investment, prices, trade, work organisation or technology also explain it. National indicators provide direction and context; suitable evaluation estimates programme contribution. International indicators complement this, while detailed local outcomes remain necessary.

8.3 Measures for the Six Directions within Plan Monitoring

Table 8–2 **National Outcomes and Measurement Fields**

Direction	Proposed indicators or evidence	Interpretive considerations
Education, competence and use	Comparable learning outcomes; skills use at work; career transitions and continuity; real income and employment quality; Omanis' share of knowledge-intensive jobs by occupation and sector.	Define group, cohort, age and occupation; distinguish qualification, competence, licensing and use.
Knowledge-services market	Active providers, repeat contracts, delivered-service value, government and private demand, and exports under economic-residence and approved-classification rules.	Distinguish people, enterprises, tasks and jobs, revenue and payment collection, and avoid counting the same transaction twice.
Enterprise productivity	Value added or comparable output per hour; quality and waste; use of data, practices and technology; sustained improvement after support.	Control for prices, quality, sector and capital; labour productivity does not reflect workers' effort alone. [34]

Direction	Proposed indicators or evidence	Interpretive considerations
Research and innovation	Research expenditure by type, funder and performer; scientific capability; testing, adoption and use; knowledge quality and scientific dissemination.	Distinguish research types, researcher headcount and full-time equivalents, and expenditure from returns. [83]
Enabling environment and services	Completion time, cost and quality; whole-journey satisfaction; finance access and suitability; timely payment; clear rights and enforcement.	Distinguish administrative records from user experience; track pending and rejected cases and group differences.
Governance and measurement	Programmes with an owner, baseline and evaluation plan; shared requirements addressed; reliable data; decisions changed by evaluation; time to resolve joint decisions, coordination cost and the share of outputs delivered and used.	Assess monitoring quality and influence on practice, not report or meeting counts.

The monitoring entity and data owners select clearly defined indicators that can be updated and compared, in coordination with the National Centre for Statistics and Information. The following register supplements these measurement fields with the 2028 follow-up questions and data. The knowledge economy's GDP share requires an appropriate definition and measurement; it cannot be derived by adding overlapping activities or generalising one programme's results.

Break down results by group, governorate and sector within data-quality and privacy limits. Averages may conceal high costs or weak access for a group; small samples may not support reliable estimates for every breakdown. Distinguish Omanis from others for national competence analysis, and residents from non-residents for services trade.

The 2028 Follow-up Questions and Data

The series returns to the same seven questions. One question may need several indicators: contract delivery, payment and repeat purchasing are separate events. Definitions and entities below are proposed for measurement development. Baseline status describes only the information available to this paper; entities may hold other records.

Table 8–2a **The 2028 Follow-up Register: Indicators, Data and Baselines**

1 **Have occupational standards informed appointment and promotion decisions, and in which sectors? Has the relationship between certificates of competence and the Oman Qualifications Framework been resolved, including the conditions for registration or linkage to the framework?**

INDICATOR AND DEFINITIONAL LIMITS

The proportion of documented appointment and promotion decisions using standards, with each decision type measured separately, in occupations with complete standards, using a stated sample. Track the decision on competence-certificate pathways and registration or linkage conditions, then applied cases; this is not a synonym for employment.

PROPOSED DATA AND ENTITIES

Ministry of Labour and standard-using entities; the Oman Authority for Quality Assurance of Education for certificate pathways. Decision, assessment and register data under access permissions.

BASELINE STATUS IN THIS PAPER

Frameworks and specified applications are evidenced. No consistent baseline for the rate of use or resolution of certificate pathways is available here; establish it before implementation.

2 **Have digital journeys been completed with less time, cost and effort, and greater satisfaction? What outcomes have the eight digital programmes achieved against their respective purposes?**

INDICATOR AND DEFINITIONAL LIMITS

Completion, time, cost, visits and user satisfaction for a selected journey, with separate outcome indicators for the eight digital programmes under Table 8–3a.

PROPOSED DATA AND ENTITIES

Service, programme and data owners within existing digital governance, coordinating with statistical and specialist entities.

BASELINE STATUS IN THIS PAPER

Published 2025 completion, procedural-saving and satisfaction rates exist but are not consistent baselines for every journey or programme. Set definitions, denominators and periods before comparison. [11] [128]

3 How many knowledge-service contracts have been fulfilled and paid for, how many have led to repeat business, and who has benefited?

INDICATOR AND DEFINITIONAL LIMITS

Number and value of delivered knowledge-service contracts; median days to payment; proportion of buyers repeating a purchase within a defined window. Separate contracts, providers and jobs and count each transaction once. Add the proportion of agreements from international exhibitions that become fulfilled and paid contracts within 12 months.

PROPOSED DATA AND ENTITIES

Procurement and local-content entities and providers; trade and statistical entities for exports. Contracts, acceptance, invoices and payments, with activity and residence definitions.

BASELINE STATUS IN THIS PAPER

Procurement instruments and aggregate SME data exist, but no consistent baseline is available here for the knowledge component, delivery, payment and repeat purchasing.

4 How many enterprises continued improving a process after support ended?

INDICATOR AND DEFINITIONAL LIMITS

Number of enterprises sustaining improvement and their share of the cohort due for follow-up. Specify process, quality and period and report untraceable cases. Separate self-funded continuation from obtaining a contract or finance.

PROPOSED DATA AND ENTITIES

Enterprise- and supplier-development implementers and participating enterprises. Process, cost and quality records before, during and after support.

BASELINE STATUS IN THIS PAPER

Each process and cohort needs a baseline at programme start and appropriate post-support follow-up, such as 6 or 12 months where suitable. No national value is available here.

5 What is the share of Omanis in knowledge-intensive jobs, and how has it changed?

INDICATOR AND DEFINITIONAL LIMITS

Omanis employed in occupations classified as knowledge-intensive ÷ all workers in those occupations within scope × 100. Approve the classification first and separate occupation, sector and period.

PROPOSED DATA AND ENTITIES

National Centre for Statistics and Information, Ministry of Labour and sectoral entities. Employment data under an approved, consistent occupational definition.

BASELINE STATUS IN THIS PAPER

No baseline is available here. Classification and record matching are required before publication; the share cannot be derived from the share of the labour force seeking work.

6 How many applied research projects have reached an actual user?

INDICATOR AND DEFINITIONAL LIMITS

Number of applied projects with verified use and their share of projects eligible for follow-up by purpose and maturity. Track transition time and subsequent funding; do not apply this indicator to basic research.

PROPOSED DATA AND ENTITIES

Research and Innovation Authority, universities, research entities and users. Project files and testing, acceptance and operating evidence.

BASELINE STATUS IN THIS PAPER

Expenditure and researcher data, institutional examples and connecting platforms including EJAAD exist but do not establish a national research-to-use baseline. Complete a purpose- and maturity-based register. [151]

7 How many handover points have a designated owner and a published measure? In how many have the completion of the work transition and the use of its outputs been verified?

INDICATOR AND DEFINITIONAL LIMITS

Number of handover points in the selected scope with an owner and measure, separately from those completed with receipt and use evidence. Naming an owner does not prove completion.

PROPOSED DATA AND ENTITIES

Ministry of Economy as coordinator in the current phase, then the body designated by the decision approving the institutional option, with programme owners and handover parties. Assignment files, handover and usage records.

BASELINE STATUS IN THIS PAPER

Table 7–2 proposes nine transitions; it is not an implementation result. Establish actual cases at commencement; do not record zero merely because data are missing.

Before publishing an indicator, complete its sheet under Appendix III: denominator, cohort, scope, timing, source, coverage and owner. State what measurement exists and what remains unavailable without inventing missing values or unsupported targets. Education, basic research and fairness outcomes remain part of broader monitoring alongside these questions.

Monitoring the Connection between Education, Skills and Work

The connection between education, skills and work is tracked through the steps individuals and employers pass through. The table proposes measures from occupational-standard coverage to competence use and work continuity.

Table 8–3 **Proposed Indicators for the Transition from Competence to Use**

What is tracked	Proposed operational definition	Contribution to assessment
Occupational-standard coverage	Occupations with approved, updated standards ÷ occupations in the defined scope map, separating approval from first use.	Reveals coverage and updating gaps, not workforce competence percentages.
Programme–standard connection	Occupational programmes documenting alignment of outcomes and assessment with relevant standards ÷ programmes reviewed.	Shows the extent and quality of connections. Occupational standards apply according to programme purpose, not automatically to all education and research.
Employer use of standards	Covered enterprises evidencing standard use in selection, training or development ÷ enterprises examined, with sample design stated.	Distinguishes the availability of standards from their use in institutional practice.
Standards in Omanisation plans and performance assessment	Enterprises legally required to specify occupational requirements and provide training and performance assessment, and that use national standards as a reference ÷ enterprises subject to those obligations in sectors with complete standards. [18]	Shows post-approval use in enterprise decisions.
Standards in public employment	State Administrative Apparatus units whose job descriptions or promotion decisions use standard-based competency specifications ÷ covered units. [21]	Reveals use of standards in public employment decisions.
Experience and transition	Number of applications by recognition purpose, outcomes, time and cost, examining repeated assessment and grievances.	Distinguishes study admission, learning credit, occupational assessment and licensing and reveals transition burdens.
Opportunity for use	People with verified use of the target competence ÷ cohort members due for follow-up, reporting how many have a known status and the coverage of follow-up contact.	Includes people who did not put their competence to use and separates contracts from workers.
Work and income continuity	Employment status, relevance and net occupational income at baseline and after 6 and 12 months or another suitable window, by person and income source.	Shows sustained use and changed circumstances; comparison is needed to estimate programme contribution.
Performance quality and productivity	Output or process measured with consistent quality, time and resources, then value added per hour where suitable data exist.	Distinguishes measured productivity improvement from certification or a pay increment.
Access and fairness	Differences in participation, completion, cost and outcome by occupation, experience, gender, governorate and assistance needs, with data protection.	Shows who benefited and who was excluded rather than assuming the average represents everyone.

Before use, the owner sets scope, denominators, baselines, sources and thresholds under Appendix III. These are proposed measurement definitions, not approved national values or targets.

Monitoring the Eight Digital Programmes' Outcomes

These indicators complement the eleven-dimension dashboard and six-direction measures and should connect to existing monitoring tools after review. They are proposals, not official indicators or approved targets. Inventory current measurement before requesting more data. Specify data year, denominator, coverage and verification source, protecting privacy and preventing double-counting of users, contracts and jobs.

Table 8–3a **Proposed Outcome Indicators for the Eight Digital Programmes**

Programme	Proposed outcome indicator	Interpretive safeguard
National Digital Transformation	Journey-completion rate, time, cost, visits and whole-journey satisfaction.	Comparable journey, group and period definitions; separate simplification, digitisation and completion from outcomes.
Artificial Intelligence	The proportion of trials reaching regular use, and changes in task quality, time and resources.	Baseline and appropriate comparison, with errors, human verification and operating costs; announcements are not adoption.
Digital Industry	Products used by clients, repeat paid contracts, value added and sustained jobs.	Separate preparation and trial agreements from purchase and collection; define sector and cohort.
Digital Infrastructure	Quality, reliability, actual coverage and service cost by location and group.	Separate announced coverage from use and quality; account for duplicate subscriptions and demand.
Digital Commerce	Active sellers, completed orders, settlement, payments and actual exports.	Separate registration and account opening from activity; apply consistent definitions of economic residence and exports.
Financial Technologies	Active use, changed transaction time and cost, and access to finance or payments.	Separate licensing and trials from widespread use; consider risks, complaints and user protection.
Cybersecurity Industry	Domestic procurement, actual exports, professional capabilities and products in use.	Separate accreditation, preparation and opportunities from delivered contracts; retain service-quality indicators.
Space	Applications using space data or services, user counts and scientific, service or commercial outcomes.	Separate planned projects, completed facilities and services in use, respecting research and investment horizons.

This monitoring does not generate a total by adding programme investment or jobs: one infrastructure asset may serve several applications and one beneficiary may be counted under several pathways. Digital-economy GDP contribution follows its statistical method; additional impact requires suitable evaluation. The benefits of education, research, culture and non-technology professional services remain part of the broader knowledge economy.

8.4 Defining Baselines and Targets before Implementation

Figure 33 **From Making an Instrument Available to Measuring Additional Impact**



Chapter 8. Distinguishes evidence types and measurement functions; it is not a grading scale or national completion percentage.

At programme launch, the owner defines the group, period, unit and source, then the objective and the threshold that would change the decision. The baseline relates to implementation timing and scope. Chapter 4's 2024–2026 comparison is historical national analysis and may not serve as a baseline for a programme that starts later. Revisit comparisons when coverage or skills, qualification or activity definitions change.

An indicator sheet specifies unit, numerator, denominator, the direction that indicates improvement, follow-up period, source and owner. For a person taking up work or entering into a contract, document pre-intervention status, subsequent activity, continuity and income, separating knowledge-service income from total income.

Six- and twelve-month follow-ups may suit some outcomes where resources permit. Each programme chooses its appropriate window rather than a uniform period. Monitoring starts from a documented point for each cohort, with time and cost included in the programme plan.

Qualification recognition, assessment, licensing and employment have different functions, references, denominators and stages. Track connections, transition times and rights using appropriate measures and targets. Basic research and long-term education require quality, cumulative scientific contribution and learning measures suited to their nature. Their value exceeds near-term commercial returns, and publication or participant counts cannot replace quality assessment.[83]

8.5 Clear Conditions for Continuation, Expansion and Stopping

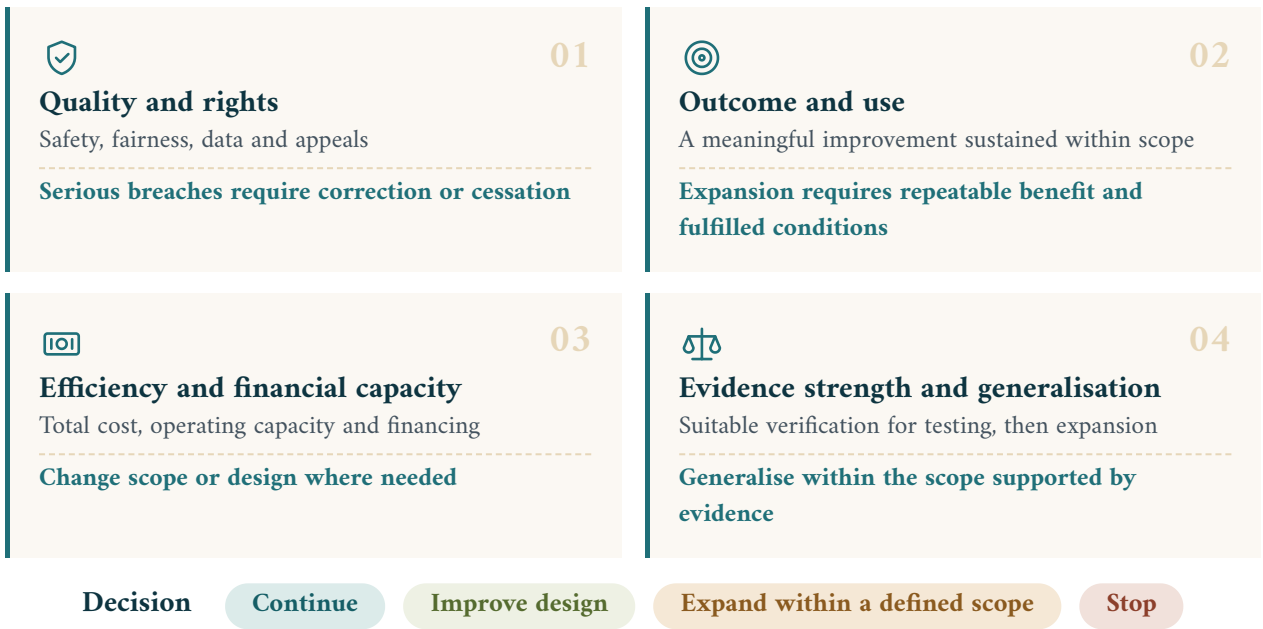
Implementation requires approval of the measurement plan alongside the programme, with indicators and thresholds suited to purpose and risk. The outcome owner, implementer and evaluation specialists define them for approval by the competent authority, based on the baseline, the service standard and the improvement that matters for the decision. Evidence requirements vary by stage: expansion needs stronger evidence than beginning a test.

Table 8–4 **Requirements before Continuation or Expansion Decisions**

Field	What is established before starting	Consequences of the result
Quality and rights	Acceptance, safety, fairness, data protection, grievances and regulatory requirements.	Correct or stop the component causing a serious breach; good average benefits do not compensate for violated rights or safety.
Outcomes and use	The meaningful improvement, duration and denominator, with continued use, learning or purchasing according to purpose.	Separate delivered outputs from outcomes; expand when benefits recur and other conditions are met.
Efficiency and affordability	Comparable total costs and allowable variation, plus capacity to operate the next stage of expansion and finance its continuation.	Adjust scope, instrument or finance as needed; do not progress automatically because time has elapsed.
Evidence strength and generalisability	Evidence sufficient for testing versus expansion, groups to which findings apply and competing explanations.	Complete verification or expand within a defined scope; do not multiply local effects by a hypothetical national population.

Owners select a few thresholds directly linked to purpose: performance quality, beneficiary access, service time, sustained use or demand, and cost against alternatives where relevant. Each is justified through baseline, service standards or design. Owners avoid importing thresholds from different experiments or changing them after results are known to improve appearances. Safety and rights remain obligatory regardless of averages.

Figure 34 **Measurement that Changes Decisions**



Section 8.5. Decision thresholds are set before implementation. Average benefits cannot offset violations of rights or safety.

8.6 Evidence Needed to Evaluate Programmes

Evaluation establishes how a programme was delivered, what changed and what value was achieved relative to the resources used. Implementation evaluation examines who accessed services, delivery and blockages. Outcome evaluation identifies change; impact evaluation asks what is attributable to the intervention. Methods are chosen to suit the policy, evaluation question, scale of the decision and available comparisons.[46] [93]

Experimental or quasi-experimental comparisons may suit some applications where lawful, ethical and supported by data. System reforms and research projects require contribution analysis and tracing change using multiple sources and examining competing explanations. Before-and-after comparison describes change but alone cannot establish cause. Experience and consultation aid interpretation; quantitative impact estimates require further evidence.[93]

Primary outcomes and analysis plans are defined before results are known, with versions and amendments documented. Report change and uncertainty alongside statistical significance. A non-significant difference does not prove the absence of an effect or the equivalence of alternatives, especially with few cases. Appendix III details design methods and follow-up safeguards.[107]

> *Before-and-after comparison describes change but alone cannot establish cause.*

8.7 Cost, Benefit and Productivity without Double-Counting

Implementers prepare one financial statement for commitments and payments and another for resources and outcomes. The latter includes costs borne by beneficiaries, enterprises and partners, allocating shared costs once on a stated basis. Distinguish cost per recorded programme outcome from cost per additional outcome caused by it; the latter requires suitable comparison.[38]

Distinguish output, revenue, payment collection, profit and value added. Value added is output less intermediate consumption and includes employee compensation. Wages, profits and value added must not be added as independent benefits where one includes another. Review knowledge-asset classification when categorising expenditure.[44 94 95]

Public benefit, fairness, service quality and learning have appropriate measures and should be monetised only through suitable methods. Distinguish expenditure savings from staff time released for other work and beneficiaries' time value. Before expansion, examine competition, displacement of opportunities, cost and demand alongside the supported provider's results.

8.8 Data Governance and Evaluation Independence

Monitoring needs shared definitions, ownership and quality rules. Detailed records remain with competent authorities where sufficient. National monitoring uses the necessary aggregate data or specific record linkages with a legal basis, obtaining what is needed without collecting every personal and enterprise detail in one database.

The monitoring owner establishes processing purpose, applicable legal scope, usage basis, and access, retention and publication permissions. It protects professional and research confidentiality and prevents double-counting of beneficiaries or transactions. It keeps correction and analytical-version records and limits retention of personal identifiers; preserving analytical history does not justify indefinite identifier retention.[57 90 74]

Implementers record events, responsible specialists verify data quality, and evaluation specialists design analysis. Independent review is proportionate to importance and risk. Implementers may correct facts and provide explanations, but technical judgement remains independent of their preferences and unfavourable findings may not be withheld. The national authority, if established, or the strengthened governance is evaluated by an independent evaluator proportionate to the intervention's risks. An indicator that improves after reorganisation cannot on that basis alone be attributed to the authority. Programme data gathering remains distinct from independent impact evaluation.[43 107]

8.9 Using National Review Findings

The national entity periodically reviews the progress dashboard, preserving indicator versions, data years and reasons for change. It distinguishes performance improvement from wider coverage or newly published information, then asks whether priorities changed because an instrument advanced, a barrier emerged or outcome evidence became clearer. Choices should change on that basis, not simply because a year passed.

Results show capabilities developed, what was used, who benefited, what remains incomplete and what requires reprioritisation. Report unfavourable results, competing explanations and data limits. Publish definitions and aggregate findings in a way that enables accountability and protects rights, with dated updates.[107]

The national entity reads international indicators alongside national data, preserving differences between rankings and growth rates and avoiding averages of incompatible measures. Where a dimension's components diverge, it shows them as they are. Where its direction cannot be determined, it identifies the information needed. The most accurate conclusion may be that operations advanced while impact evidence remains incomplete. This informs decisions better than an aggregate percentage that implies certainty that is not available.

8.10 Measurement that Changes Practice

Strategy learns when monitoring changes decisions. Entities strengthen what works, correct implementation, capability or access conditions obstructing outcomes, and redirect resources when needs change. Every programme therefore needs a national-direction link, defined outcome, baseline, targets and thresholds.

Measurement becomes part of managing the transition. National indicators within Plan monitoring show progress, sector measures locate transitions and blockages, and programme evaluation explains contributions. Learning, education and long-term research use appropriate measures. The knowledge economy is broader than one licence, contract or experiment.



CLOSING REFLECTIONS

Conclusion

Knowledge Drives Development When We Build and Use It

People and their knowledge were central to the 2024 study and remain central here. The follow-up clarifies the questions of the transition: How do education, skills, research and technology become organisational capability? How do they create individual opportunity and benefits for society?[1]

The follow-up identified specific framework and application developments, digital operational outcomes, research capabilities and existing connections, alongside mixed indicators and missing use and impact data elsewhere. This calls for using available capability, addressing gaps and investigating difficulties through actual work. "Value leakage at handover points" remains one hypothesis to test, not a proven system-wide cause.

A Clear Direction and Implementation that Learns

The six directions bring together education and competence, markets, enterprises, research, the enabling environment and governance. We learn through application, expand what proves useful, adjust what does not achieve its purpose and continue long-term investment in people and science.

Standards do not create buyers, qualifications do not guarantee knowledge use, and finance cannot replace viability. Capability needs real work opportunities; opportunities need quality, organisation and suitable finance. We therefore begin by identifying what each case lacks and choosing the response that suits it.

A Recommendation to Build On

The paper recommends adopting the six directions as a framework operating through approved Eleventh Five-Year Plan programmes to 2030 within Oman Vision 2040. It connects programmes, assigns transition responsibility and measures use and outcomes, drawing on the eight digital programmes. Maximising the benefit of knowledge requires clear leadership with the necessary powers, resources and competence. The paper therefore proposes comparing the establishment of a National Knowledge and Digital Economy Authority with strengthening existing governance, so that whichever option proves its value can be approved. The aim is better opportunities for people and higher productivity for enterprises and services, not merely a new institution.

The seven proposed decisions in Section 6.11 are put forward for consideration by the competent authorities; approval, instruments and resources remain within prescribed processes. The transition is presented through its dimensions, evidence and measurement needs, distinguishing proposals, decisions, operations and established outcomes.

> *People remain central, supported by institutions, markets and partnerships helping knowledge grow and work.*

Questions for the 2028 Follow-up

The 2028 edition returns to the same seven questions using Table 8–2a's definitions and data, the progress dashboard and Appendix II's 2024 recommendation register:

1. Have occupational standards informed appointment and promotion decisions, and in which sectors? Has the relationship between certificates of competence and the Oman Qualifications Framework been resolved, including the conditions for registration or linkage to the framework?
2. Have digital journeys been completed with less time, cost and effort, and greater satisfaction? What outcomes have the eight digital programmes achieved against their respective purposes?
3. How many knowledge-service contracts have been fulfilled and paid for, how many have led to repeat business, and who has benefited?
4. How many enterprises continued improving a process after support ended?
5. What is the share of Omanis in knowledge-intensive jobs, and how has it changed?
6. How many applied research projects have reached an actual user?
7. How many handover points have a designated owner and a published measure? In how many have the completion of the work transition and the use of its outputs been verified?

People at the Centre of the Transition

The aim is for people to renew their capability and find fair opportunities to use it, for enterprises to learn, produce and compete, and for scientific quality and benefits to accumulate. It includes more accessible, effective public services benefiting diverse governorates and groups. The purpose extends beyond training, platforms and contracts.

People remain central, supported by institutions, markets and partnerships helping knowledge grow and work. This requires a clear direction connecting capability development to use, reasoned priorities, outcome responsibility and willingness to learn. The next follow-up will test progress by examining what has moved from an available instrument to use and outcomes.



REFERENCE AND DETAIL

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APPENDIX I

Updated Figures and the Evolution of the Argument since 2024

A. Update and Correction Register

This register explains how earlier figures and comparisons affecting the analysis are treated, distinguishing data updates, definitional clarification, transcription corrections and estimation-method changes. It identifies what can be cited and on what basis.

Table A1–1 **Update and Correction Register**

Location in the 2024 study	Treatment adopted here	Reason and reference
pp. 54–60: derivation of 519,000, then approximately 494,000, and calculations of revenue and national impact.	The count is not used to estimate jobseekers or qualified people ready to work. The OMR 12.4–30 billion ranges and 2040 ranges are not adopted as national forecasts. Subsequent estimates begin with the group, activity, demand and capability.	Population groups, activity and qualifications differ, as do revenue, output, value added and additional impact. Citation and estimation methods changed without introducing a replacement implementation headcount. [1] [44]
pp. 36–46: GDP growth and comparisons of selected countries.	Cases inform understanding of instruments and operating conditions, not transfer of a growth percentage to Oman. Average percentage increases are distinguished from growth of combined economies.	GDP in current US dollars is affected by prices and exchange rates. Descriptive comparison does not isolate the knowledge transition's growth contribution. [1] [38]
pp. 104–106: Human Capital Index and schooling years.	Oman's reference value is 0.61, with 12.8 expected years of schooling and 8.6 learning-adjusted years of schooling. The difference is 4.2 equivalent learning years, not actual dropout years.	Establishes the value and definition. The World Bank's 2020 profile does not directly measure workers' skills in 2026. [51]
pp. 120–123: ICT Development Index edition and comparison.	90.5 belongs to the 2023 edition and 91.7 to 2024. The selected-country average is named for its actual group, not called the world average.	Corrects edition attribution and comparison label; publication years may differ from data years. [53]
pp. 120–121: Saudi Arabia's 2022 e-government value.	The UN original gives 0.8539 rather than the table's 0.38; Oman's value is 0.7834. Recalculate averages when using this historical comparison.	Corrects a numerical transcription affecting comparison, using Table A3 in the E-Government Survey 2022 annex. [108]

Page references concern the 323-page 2024 study. The register is limited to treatments material to the present analysis.

B. How the Argument Has Evolved

Alongside numerical revisions, the approach has changed in five areas as instruments emerged and evidence became clearer. The changes are stated because follow-up requires reconsidering earlier choices as reality changes. Every edition reviews the foundation of its predecessor.

> *The purpose remains constant while instruments change with evidence.*

Table A1–2 **Changes in the Argument and Their Reasons**

Subject	2024 study	White Paper 2026	Reason for the shift
Work sequencing	Two phases beginning with education, professional education and culture, while permitting some second-phase factors to be implemented in parallel.	Expanded parallel work, with education and basic research continuing and applied priority given to linking capability with use.	Many first-phase instruments now exist and can be used before all are complete. [4] [3]
Focus	Supply: education, qualifications and skills.	Demand and use: markets, enterprises and movement between entities.	Uneven evidence on instrument development versus the measurement of their use and outcomes prompts examination of demand and use without assuming one cause. [11] [12]
Governance	Two new national programmes under the Financial and Economic Committee.	Coordination led by the Ministry of Economy in the current phase, with a comparative study of two options: a National Knowledge and Digital Economy Authority, or strengthening existing governance; entities' responsibilities preserved.	Existing mandates, structures and digital governance offer a foundation. The choice between strengthening them and establishing a national authority is settled by comparing authority, leadership, resources and results, not by assuming in advance that a single form is suitable. [26] [111] [128]

Subject	2024 study	White Paper 2026	Reason for the shift
Culture	A societal factor requiring a national cultural-change programme.	Behaviour whose causes are examined through incentives, income stability and costs, addressed within Direction One through initiative and learning incentives measured by behaviour.	Culture is one possible explanation; incentives permit more specific measurement and responses.
Economic estimation	A model of independent-service returns with national ranges.	A multidimensional progress dashboard separating frameworks, use and outcomes without one aggregate number.	The return model's assumptions could not be established; the dashboard allows transparent comparison across editions.

The purpose remains constant while instruments change with evidence. This is the follow-up principle of this series: preserve the aim and review the route.

APPENDIX II

Follow-up on the Recommendations of the 2024 Study

Status of the Sixteen Recommendations and What Future Editions Will Measure

The register preserves the original sixteen recommendation numbers and their status at the evidence cut-off date. Five categories are used: supporting instruments have emerged, under implementation, ongoing pathway, no announced change established, or reformulated.

These categories describe where an instrument or recommendation stands on the implementation path; its final impact still requires independent measurement. A measure serving a recommendation does not mean it was caused by it. Thematic alignment differs from evidence of reliance on the study. As the register is updated in each edition, it tracks movement from recommendation to instrument to use.

Status at the Cut-off Date

Status	Number of recommendations
Supporting instruments have emerged	7
Under implementation	1
Ongoing pathway	2
No announced change established	1
Reformulated	5
Total	16

Figure 35 **Follow-up Status of the 2024 Study Recommendations**

16 recommendations



Supporting instruments have emerged	7
Under implementation	1
Ongoing pathway	2
No announced change established	1
Reformulated	5

Status of each recommendation by its number in the 2024 study

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

A follow-up classification, not a national completion rate.

Appendix II, Table A2–1. Status describes where an instrument or recommendation stands on the implementation path; its impact still requires independent measurement.

Table A2–1 **Follow-up Register for the Sixteen Recommendations**

1 Extend the scope of government scholarships to include professional qualifications

No announced change established within the scope of this paper.

CHANGES IN WORDING OR APPROACH

Included under Direction One as an expansion of scholarship and qualification pathways to cover professional qualifications listed in the national framework.

WHAT THE NEXT FOLLOW-UP WILL TRACK

Publication of scholarship regulations covering listed qualifications.

2 Overcome the dominance of traditional culture

Reformulated.

CHANGES IN WORDING OR APPROACH

Move from describing culture to examining incentives and behaviour, and address initiative and learning through incentives measured by observed behaviour, in Section 4.10 and Direction One.

WHAT THE NEXT FOLLOW-UP WILL TRACK

Initiative, learning and career transition behaviour, beyond awareness alone.

3 Support enrolment in professional qualifications

Supporting instruments have emerged.

DOCUMENTED EVIDENCE

Two professional qualifications were aligned with the national framework in 2026, and a qualification listing service is available. [9] [10] [22]

CHANGES IN WORDING OR APPROACH

An institutional instrument exists, but financial support for enrolment has not been established.

WHAT THE NEXT FOLLOW-UP WILL TRACK

The number of professional qualifications listed and aligned, and the number of learners enrolled.

4 Empower the Oman Authority for Quality Assurance of Education

Under implementation.

DOCUMENTED EVIDENCE

Royal Decree 12/2026 renamed the Authority and transferred responsibility for licensing educational occupations to it. [58] [61]

WHAT THE NEXT FOLLOW-UP WILL TRACK

Determine the relationship between competency certificates and the framework, the conditions for registering them or linking them to the framework, and the time required for listing and level placement where applicable.

5 Develop vocational, technical, digital and professional education

Supporting instruments have emerged.

DOCUMENTED EVIDENCE

Royal Decree 61/2024 transferred vocational training to the Ministry of Labour and linked curricula to standards. The school vocational and technical pathway expanded and entered its third year in 2025/2026. [3] [8] [119]

WHAT THE NEXT FOLLOW-UP WILL TRACK

Graduates' transition from these pathways into work or further study.

6 Comprehensively develop the educational process

Ongoing pathway.

DOCUMENTED EVIDENCE

The School Education Law and Higher Education Law, issued by Royal Decrees 31/2023 and 27/2023, and the 2026 Executive Regulation of the Higher Education Law. [54] [30] [31]

WHAT THE NEXT FOLLOW-UP WILL TRACK

Internationally comparable learning outcomes.

7 Make professional qualification a condition of promotion

Reformulated.

DOCUMENTED EVIDENCE

Ministerial Decision 317/2025 linked annual increments in the private sector to performance reports. [24] A government promotion system linked to performance and individual competence was announced in September 2026. [122] The promotion system includes a "skills development" component worth 12.5 points [155]; Qatar's Decision 11/2026 provides a regional precedent for linking training and development to promotion. [149]

CHANGES IN WORDING OR APPROACH

Define a competency specification for the job and evidence of competence recognised in promotion, rather than require a particular certificate, under Direction One.

WHAT THE NEXT FOLLOW-UP WILL TRACK

The proportion of promotion decisions based on evidence of competence.

8 Promote lifelong learning

Supporting instruments have emerged.

DOCUMENTED EVIDENCE

Experience-based pathways in the Higher Education Law and its 2026 Executive Regulation, and recognition of prior learning within the standards system. [30] [31] [5]

WHAT THE NEXT FOLLOW-UP WILL TRACK

The number of applications for recognition of prior learning, their outcomes and processing times.

9 Promote a culture of innovation

Reformulated.

DOCUMENTED EVIDENCE

The Research and Innovation Authority was established in 2026. [58]

CHANGES IN WORDING OR APPROACH

Shift follow-up from culture to a project's transition to its user.

WHAT THE NEXT FOLLOW-UP WILL TRACK

The number of applied projects that have reached a user.

10 Attract and retain talent

Supporting instruments have emerged.

DOCUMENTED EVIDENCE

The new promotion system and its special retention and recruitment pathway were announced in September 2026 for government employment. [122] Use of this pathway is decided by the head of the unit within a limit of 1% of the allocation for comparative selection. [155]

CHANGES IN WORDING OR APPROACH

Followed up under Directions One and Two.

WHAT THE NEXT FOLLOW-UP WILL TRACK

Retention indicators when data become available.

11 Amend the framework governing public employment

Reformulated.

DOCUMENTED EVIDENCE

The three-pathway promotion system announced in September 2026, with continued reference to the legislation and rules applicable to each decision. [122] [21]

CHANGES IN WORDING OR APPROACH

Competency specifications, job descriptions and structured assessments, and testing of the indicative framework in Appendix V, without reducing the new pathways to the old comparative selection weightings.

WHAT THE NEXT FOLLOW-UP WILL TRACK

Use of competency evidence, assessor consistency, grievances and performance following decisions under each pathway.

12 Raise awareness of digital transformation

Reformulated.

DOCUMENTED EVIDENCE

Tahawul implementation progress and published procedural savings, with average satisfaction of 78%, and eight digital programmes for the second phase. [11] [128]

CHANGES IN WORDING OR APPROACH

Track user journeys and digital programme outcomes and their links to the other directions, without calculating a numerical gap between implementation progress and satisfaction.

WHAT THE NEXT FOLLOW-UP WILL TRACK

Journey completion, time, cost and user satisfaction, and programme outcomes measured using separate denominators.

13 Partnership between educational institutions and the labour market

Supporting instruments have emerged.

DOCUMENTED EVIDENCE

Sector skills units, representation of professional associations and units on boards of trustees, and the National Employment Policy. [5] [31] [7]

WHAT THE NEXT FOLLOW-UP WILL TRACK

The proportion of programmes linked to standards and the extent to which employers use those standards.

14 Increase investment in research and development

Ongoing pathway.

DOCUMENTED EVIDENCE

Expenditure of OMR 189.42 million, equivalent to 0.45% of GDP, in 2025, compared with OMR 160.28 million and 0.39% in 2024; an innovation outputs rank of 89. [13] [113] [150]

CHANGES IN WORDING OR APPROACH

Track the transition of research into use alongside expenditure, under Direction Four.

WHAT THE NEXT FOLLOW-UP WILL TRACK

The proportion of applied projects that have moved into use, and expenditure by type.

15 Technological infrastructure and platforms in education

Supporting instruments have emerged.

DOCUMENTED EVIDENCE

The A2M artificial intelligence platform in education: a "ready to scale" trial in partnership with the National University of Science and Technology. [132]

CHANGES IN WORDING OR APPROACH

An experimental instrument; readiness to scale does not establish actual use in learning.

WHAT THE NEXT FOLLOW-UP WILL TRACK

Use of platforms in learning, beyond their availability.

16 Strengthen international cooperation

Supporting instruments have emerged.

DOCUMENTED EVIDENCE

Ratification of the cooperation agreement with the European Organization for Nuclear Research by Royal Decree 85/2026 [75], and of the Digital Cooperation Organization Charter by Royal Decree 86/2026. [76] Founding membership of the World Artificial Intelligence Cooperation Organization alongside 29 countries, Shanghai, 16 July 2026. [157]

WHAT THE NEXT FOLLOW-UP WILL TRACK

Actual research participation and the knowledge transferred through it.

In the next follow-up, we will return to the questions in the final column, monitor outcomes using the Chapter 8 indicators, and evaluate impact through the methods it describes. The register thereby connects what has actually happened with what we need to know about its outcomes.

APPENDIX III

Technical Reference for Programme Design and Measurement

Policy Options, Indicator Sheet, Evaluation Methods and Progress Dashboard Rules

The first-person plural in this appendix describes analytical steps proposed for the entity preparing or implementing a programme. It does not refer to work undertaken by the author or publisher.

A. The Eighteen Policy Options

The eighteen options help entities turn the directions into programmes suited to their needs. Each option's description explains the problem it addresses, when it is preferable to alternatives and what its evaluation requires. These are design choices; programme adoption and prioritisation are determined through an assessment of the specific case.

Table A3–1 **Index of Options to Support Design**

Code in the research register	Option	Main links to the directions
O01–A	Learning targeted at a performance gap	Education, competence and use.
O01–B	Assessment of experience and prior learning	Education, competence and quality.
O01–C	Transition to the use of competence	Education, work and the knowledge market.
O02–A	Improving management practice	Enterprise capabilities and productivity.
O02–B	Appropriate technology adoption	Enterprise capabilities and the digital environment.
O02–C	Purchasing a specific knowledge service	Enterprise capabilities and the knowledge market.
O03–A	Commercial readiness	The knowledge services market.
O03–B	Access to existing buyers and channels	The knowledge services market and access to overseas markets.
O03–C	A paid procurement trial where needed	The knowledge market and procurement, within the applicable legal basis.
O04–A	Completing scientific or experimental development	Research and innovation.
O04–B	Testing and knowledge transfer services	Research, innovation and use.
O04–C	Co-development with the user	Research and its links to enterprises and public services.

Code in the research register	Option	Main links to the directions
O05–A	Clarity in contracting, invoicing and payment collection	The enabling environment, the market and productivity.
O05–B	Access to working capital finance	Finance and enterprise capabilities.
O05–C	Credit risk management	Finance and market access.
O06–A	Simplifying the service journey	The enabling environment and public services.
O06–B	Controlled data exchange	Services, governance and measurement.
O06–C	Assistance with service completion	Equitable access and service quality.

Table A3–2 links these options to the sixteen recommendations of the original study, which Table 2–3 groups. Education, science, competition, regulation and finance policies remain broader than the operational options presented here. An option may serve more than one direction, but its costs and benefits are counted only once.

A1. Competence and Use: What Service Does the Individual Need?

We begin with the individual and the task: What capabilities do they have? What does the task require? What prevents them from mastering it or gaining access to it? They may need new learning, recognition of their experience, or an opportunity to use competence they already possess. This approach is consistent with the OECD skills framework, which connects skills development with skills use and governance of the system. We therefore identify individual needs before determining the number of training places.[27]

To estimate what the programme adds, we describe the learning, assessment, job-search services and arrangements for using skills available to the target group. We explain what is expected to change even without the proposed additional support. When comparing options for a specific group, we specify the coverage and cost of these services.

— *Learning That Addresses a Specific Performance Shortfall*

If an individual needs a capability they do not yet possess, we identify the required competence, the task and the assessment instrument. We then design training modules and practical applications around the existing gap. Decisions on need and funding are separated from the interests of the training provider, so that the intervention remains responsive to need. Mastery is verified afterwards.

Linking learning to an immediate task applies to the practical trial described here. Foundational education and skills that support transitions between jobs have broader objectives and time horizons. They retain their importance even when no job is immediately available after learning.

— *Assessing Experience and Recognising Prior Learning*

An individual may possess a capability and need to demonstrate it for a specific purpose: admission to study, credit for prior learning, assessment of occupational competence, or fulfilment of a licensing requirement. Each purpose has its own authorities and rules. Higher education provisions and the qualification listing ser-

vice provide a basis for some of these pathways. Obtaining a degree, promotion or licence remains subject to its respective conditions. We compare assessment of experience with relearning in terms of time, cost, performance evidence and fairness.[30] [31] [22] [109]

— *Moving from Demonstrated Competence into Work*

When an individual's capability is established but its use is impeded, we connect them with a task, a client or workplace learning. We organise the relationship, rights and supervision. Standards help describe the task's requirements and the individual's capabilities, while employment opportunities also depend on buyer or employer demand. This option connects with employment policy and flexible work frameworks within their respective scopes.[7] [63] [79]

Across the three options, we calculate the costs of diagnosis, assessment, supervision, grievances and learning time, alongside tuition fees. We measure mastery, use of competence and continuity, and follow up with those who did not complete the pathway to establish their reasons for leaving. We also determine assessment capacity and arrangements for its independence in proportion to the actual scale of the service.

Support is based on published criteria suited to the task, independent of a particular provider or certificate. We protect more difficult cases from exclusion merely to improve average results. Before expanding assessment and licensing, we examine capacity, quality and whether requirements are proportionate to occupational risks, and explain transition and grievance pathways. Training remains separate from judgements of competence, and eligibility remains independent of purchasing a service from a particular provider.

◆ A2. The Enterprise's Capacity to Use Knowledge

We begin with a process the enterprise wants to improve, such as inventory management, quality, customer service or cash planning. Problems vary between enterprises, so work targets the process itself. The management practice evidence presented in Box 6–2 supports testing this approach and moving beyond simply counting training participants.[33] [97]

We describe the enterprise's practices, systems and purchased services, then identify improvements it would have made using its own resources or existing support. We compare the options against this reference scenario, so that those improvements are not automatically attributed to the new programme.

— *Improving a Management Practice Within the Enterprise*

A specialist diagnoses the problem with the process owner; together they test changes to working methods and embed those that work. Management and employee responsibilities and the data source are specified at the outset. A provider is selected whose experience suits the problem and whose outputs can be examined.

This option suits an enterprise that has basic resources but needs to organise their use. Its cost includes consultancy, staff time and follow-up; success is tested by whether the practice continues after support ends.

— *Adopting Technology to Solve an Operational Problem*

Before purchasing a new system, we examine potential improvements to the existing one and compare them with available solutions. We calculate data, integration, security, training, maintenance and contract-exit requirements. The process owner verifies the solution's ability to perform the required function.

We assess the technology's value through expected improvements in time, quality, waste or productive capacity. We calculate licensing, upgrade and supplier-dependence costs. A tool's novelty and its description as artificial intelligence are not sufficient to justify its purchase.

— *Purchasing a Knowledge Service Rather than Building the Entire Capability In-House*

A small enterprise may need a periodic service or specialist project, while the scale of its need does not justify hiring a full team. We then consider contracting a qualified provider to deliver a clearly defined output. The contract includes transferring the knowledge the enterprise needs to use that output.

A defined financial contribution for eligible enterprises may be considered where its rationale is established. Each application is assessed before deciding whether to provide support and at what level, rather than assuming universal support or a uniform price. The buyer remains responsible for use, and the purchasing decision remains independent of the provider's interest in selling the service.

We compare the three options against a common operational outcome over an appropriate period. Improved management practice may complement technology or an external service, but each addition requires justification of the value it adds beyond the simpler option. If the underlying problem is weak demand or losses caused by other factors, we address the cause before purchasing systems and consultancy. We also examine displacement of existing private services, provider price inflation, and support for enterprises that would have purchased the service anyway.

◆ A3. Demand and Markets: From Service Capability to Repeat Contracting

This group addresses the difficulty of connecting a qualified provider with the right buyer and completing a transaction. We use existing instruments, including Sas for Excellence, after establishing the target group's eligibility and the instrument's scope. Independent service providers and enterprises may have different needs requiring different programmes.[87]

We define the service market, then describe the sales, marketing, supplier development and procurement channels the target group can actually use. We identify contracts expected through those channels without the new intervention. This provides the basis for estimating what each option adds.

— *Developing a Service's Commercial Readiness*

This option suits a service whose offer does not match an established customer need. We work on defining and pricing it, demonstrating its quality, protecting client information, preparing proposals and managing the commercial relationship.

We begin with the reasons specific transactions were rejected or not completed. We then use applied learning and review of work to develop an offer that can be tested and practices that can be used. This addresses a service's poor fit before increasing expenditure on marketing it.

— *Structured Access to Buyers and Existing Channels*

When the service meets the need but reaching the buyer is difficult, we gather specific requirements and introduce providers. We help prepare contracts through an existing channel where it is adequate. Alongside recorded interest, we test the seriousness of demand through a budget, a purchasing decision or a trial of

the service.

For exports, we identify the market, its professional, contractual and data requirements, and intermediary fees. We then assess what is needed to convert the opportunity into a contract and whether it can be completed.

— *A Paid Procurement Trial for a Knowledge Service*

A trial is proposed for commissioning government knowledge services from qualified Omani freelancers, based on Financial Circular 1/2026 issued in September 2026. The buyer begins with its need and delivery specifications, then opens competition under the applicable provisions and guidelines. We compare the existing commissioning method with a service provided by a new freelancer who meets the conditions, examining quality, cost, payment and repeat purchasing.[16]

The OMR 5,000 ceiling defines the circular's contracting scope. It is neither an average fee nor a justification for splitting work into smaller contracts. Before commissioning, the competent entity reviews the contracting procedures guide and completes eligibility and licensing requirements. It determines the trial's scale, cost and method after assessing need and feasibility.[16] [88]

◆ A4. Research and Application: How Does a Project Reach Use?

These options concern projects with a defined applied purpose. We compare them to arrive at a solution suitable for testing or use. Basic research, by contrast, is funded for the knowledge and scientific capacity it builds according to its purpose and time horizon. We therefore do not place it in direct competition with purchasing a ready-made product or make commercialisation a condition of every research project.[83]

We describe the work, funding and partnerships approved for the project at its current stage, and what it is likely to achieve without the proposed instrument. We then measure the addition to this reference scenario. This makes the comparison realistic, without assuming that all research would stop in the absence of new support.

— *Completing Development and Verification Within the Project*

This option suits an unfinished scientific or experimental solution. We define the development question and a verifiable result. Work is then funded in stages linked to advances in knowledge or the prototype's readiness for testing, and an independent scientific body reviews the outputs.

The user specifies requirements without imposing a guaranteed result on the researcher. We calculate the costs of team time, materials, equipment access and verification. If a hypothesis with research value proves incorrect, we document what was learned rather than conceal the result.

— *A Shared Testing and Knowledge Transfer Service*

A project may have a sound technical basis but be held up at the next step by testing, rights or negotiation. We then compare creating new capacity with purchasing a specialist service or providing it through an existing entity.

Service arrangements specify response times, fees, assessment responsibilities and rights to use the results. WIPO intellectual property policy tools help organise ownership, use, collaboration, returns and conflicts of interest. They must first be adapted to the law and the nature of the institution.[102]

— *Co-Development Beginning with a User's Problem*

A public-sector user or enterprise describes a challenge and the required outcome, and suitable teams compete to develop and test a solution. The contract distinguishes pre-existing knowledge from knowledge generated by the project. It clarifies research, publication and use rights, and each party's contribution to costs and risks.

Ownership and rights are specified in the contract. Financial contributions do not automatically confer ownership of all knowledge, and a successful prototype does not create an obligation to purchase it at scale. Before adoption, we verify the user's capacity to operate and maintain the solution and finance both.

Enterprise Ireland's Innovation Voucher programme provides an example of connecting an enterprise's innovation question with a knowledge provider in the publicly funded research system. It sets eligibility conditions for beneficiaries and providers and excludes routine training, general consultancy and software purchases. We draw on it to define the question, scope of work and delivery. We do not transplant its funding amounts or assume that the voucher funds every service. A research output may be a step towards a product rather than a finished commercial product.[103]

We select what the project needs at its current stage: completing development, a testing and transfer service, or a partnership beginning with user need. Projects are then assembled into a portfolio reflecting their different time horizons and benefits. Follow-up continues after agreement and transfer of rights to determine how the solution was used and what resulted.

◆ A5. Contracting and Liquidity: Selecting the Instrument According to Risk

Published studies show the importance of procedures, guarantees, product suitability and financing costs in small enterprises' access to finance. We therefore examine product design and price, compliance costs, creditworthiness and risks, alongside improvements in enterprise management.[20]

Before introducing new support or facilitation, we identify the contracting, payment collection, financing and coverage available to the eligible business. We specify its terms, cost, timing and risks. This reference scenario is established through actual transactions: a product description alone does not show what is available to the business in practice.

— *Improving Contracting, Invoicing and Payment Collection*

This option addresses ambiguity in the scope of work, acceptance conditions or documentation and payment dates. We clarify the contract and delivery milestones, adopt verifiable invoices and establish a dispute resolution pathway. This may require better records and cash forecasts.

The business team and buyer carry out this work with specialist support. We track the intervals between performance, acceptance, invoicing and payment to understand delays and calculate costs for both parties. Improving the process may reduce financing needs. Creditworthiness assessment and the buyer's right to raise legitimate objections to delivery remain in place.

— *Facilitating Access to Working Capital Finance*

We begin by examining eligibility and the credit profile, then link finance to the cash cycle of a specific transaction. The Development Bank website presents working capital instruments linked to orders and receivables. Their suitability for eligible cases can be tested and access improved. Each application remains subject to as-

sessment; automatic financing for every service is not assumed.

The lender retains the credit decision. The comparison includes fees, financing costs, guarantees, time, and reasons for acceptance or rejection.[85]

— *Managing and Allocating Non-Payment Risk*

We examine insurance against the risks of specific buyers where the transaction meets coverage conditions. Credit Oman offers domestic and export trade credit products covering goods and services. We review coverage limits, exclusions and claims procedures alongside the premium.[89]

If a gap remains unserved by existing instruments, a proposed public guarantee requires a separate decision. That decision states the rationale, exposure ceiling, pricing and treatment of contingent liabilities. We estimate the guarantee's cost and risks while maintaining the distinction between it and commercial insurance.[89]

Invoice processing, finance and coverage may complement one another, while demand and delivery viability remain the basis for business continuity. Working capital finance does not resolve structural losses in a business model. Research subject to considerable uncertainty may require an instrument other than debt. When calculating economic benefits, we separate loan principal from administration costs, subsidies and expected losses, and distinguish these items from the liquidity effect.

◆ A6. Completing the Public Service Before Adding Channels

We select a specific public task and track its stages, working and waiting time, requests for additional information and reasons for non-completion. We then identify what it needs: a simpler procedure, better information exchange or user assistance. The aim is to complete the selected task and assess its requirements before assuming that a comprehensive system for all services must be built at once.

We compare against the current service and approved simplification or integration expected to occur. We calculate time and cost for the entity and user and the number of incomplete cases. These existing developments form part of the reference scenario; we do not assume the service would remain unchanged without the new option.

— *Simplifying the Procedure and Assigning Responsibility for Tracking the Journey*

We review required data, approvals and their sequence, and remove unnecessary duplication within existing powers. A designated service owner coordinates and follows up while respecting other entities' mandates.

We compare the improvement's cost with employee and user time savings and its contribution to quality and complaint handling. Where change requires amendment of a binding rule, we identify the provision, the appropriate legal instrument and transition steps. The work then goes beyond altering a digital interface.

— *Exchanging Data Between Service Components*

When service delivery is impeded by re-entry of available information or inconsistencies in it, we examine data exchange between its components. Before selecting technical integration, we identify the data, its source, the purpose and legal basis of processing, and control access rights, retention periods and security requirements.

The National Open Data Portal is useful for the public data it makes available. Personal or restricted records are subject to their own rules. We independently verify whether they can be accessed and whether integration interfaces exist.[90] [86]

— *Helping Beneficiaries Complete the Service*

A channel may exist but be difficult for a particular group to use. We then test human or field assistance, accessibility measures suited to persons with disabilities, or dedicated follow-up for complex cases.

We use existing channels wherever possible and publish eligibility criteria for support, its cost, staff responsibilities and the limits of staff access to information. We then measure service completion, quality, user satisfaction and elapsed time, and follow up withdrawals and referrals. Individual assistance supports service reform, while recurring procedural failures still need to be addressed.

For the three options, we specify monitoring data proportionate to the question being asked. When estimating benefits, we distinguish cash savings in the entity's budget from time made available to beneficiaries. Both are documented without double counting. We also review results by case type, beneficiary location and ability to access the service. An improved average may conceal an increased burden on more difficult cases.

◆ Links Between the Options and the Original Study's Recommendations

The option groups connect the directions of the 2024 study with their applications: developing people, facilitating the use of their knowledge, and strengthening institutions and relationships that increase its benefits. School and academic education and educational infrastructure remain a foundational pathway with a long-term horizon.[1]

Table A3–2 **Links Between the Earlier Directions for Action and the Option Groups**

Original recommendations by number	Connection to the current design
1, 3, 7, 8, 11: qualification, support, learning, promotion and the employment framework.	"Competence and use": define the task and target group, and choose learning, demonstration of experience or access to use, while examining the appropriate legal instrument.
4, 5: quality assurance and vocational, technical and digital education and training.	"Competence and use" and "enterprise absorptive capacity": the quality of assessment and training and the enterprise's capacity to use knowledge, taking implementation capacity into account.
6, 15: comprehensive educational development and educational infrastructure.	A long-term foundational pathway linked to competence and service completion, extending beyond immediate employment or a particular platform.
2, 9, 12: initiative, innovation and digital awareness.	Incentives, practice and access within the groups, with measurement of specific behaviour or use.
10, 13: talent and partnership between education and work.	Competence and use, enterprise absorptive capacity and research transfer: experience, applied learning, use, and research partnerships with clear roles.
14, 16: research and development and international cooperation.	Research transfer and access to demand: diverse research portfolios, use of knowledge, and clearly scoped access to knowledge and markets.

This analytical mapping draws on the original study's recommendations on pp. 231–233 and their elaboration on pp. 234–320. Multiple connections do not imply splitting a recommendation's funding or counting its benefits more than once.

One package may begin with demonstrated competence, then access to a client, then transaction finance. Another may begin with improving an enterprise process before purchasing technology. For each package, we identify prerequisites, what can proceed in parallel and the entity receiving another's work. A single national sequence cannot accommodate diverse needs. We address duplicate recording of a service or beneficiary across pathways when aggregating costs and benefits.

We account for changes in tasks, prices and demand. We test packages against falling demand, higher operating costs, delayed finance and technological change; provider sustainability does not rest on an assumption of constant working hours. We choose participation arrangements that take account of higher-cost governorates and groups and avoid unjustified exclusion. We also distinguish the right to access a service from the ability to pay its full price. These considerations guide programme design; final funding priorities still require a decision.[42]

B. Indicator Sheet and Monitoring Rules

Table A3–3 **Indicator Sheet Fields**

Element	What must be specified
Purpose and unit of measurement	The desired outcome, the definition of the person, enterprise or transaction, and the direction of improvement.
Population and denominator	Eligibility, target group, cohort, scope, and the number who have reached the measurement date, including unsuccessful cases.
Timing	Baseline, follow-up start and window, and cut-off date, distinguishing the data year from the publication year.
Data source	The entity and register or survey, selection method, quality and verifiability.
Unknown outcomes	Follow-up coverage, withdrawals, pending and unknown cases, without automatically classifying unknown outcomes as success or failure.
Target and threshold	The value approved by the entity before operation, its rationale, and the decision that changes when it is or is not reached.
Responsibility and protection	Data ownership, verification, and access, retention, publication and correction rights.

When measuring time, we separate completed from pending cases and report how long pending cases have remained open instead of assigning them zero duration. When measuring income, we distinguish revenue, net service income and payments collected, and fix the reference period. Alongside percentages, we report counts, denominators and follow-up coverage. We then test whether the conclusion changes under different assumptions about people who could not be followed up.[46] [43]

C. Selecting the Appropriate Evaluation Method

Table A3–4 **Evaluation Designs and Conditions for Their Use**

Method	When should its use be considered?	What constrains the conclusion?
Random assignment meeting applicable safeguards	When access to an intervention or its timing can be allocated fairly among eligible participants without infringing an established entitlement.	Specify the assignment unit, follow-up and spillovers. Phased implementation alone does not make a design randomised.
Difference-in-differences	When intervention and comparison groups, before-and-after measurements, and data to examine prior trends are available.	Justify each group's expected trajectory without the intervention and examine differential shocks; prior similarity alone does not establish the assumption.
Interrupted time series	When the change date is known and sufficient repeated measurements are available, preferably with an unaffected comparison series.	Examine trends, seasonality, correlation between observations and concurrent changes.
Contribution analysis and tracing change	For a systemic or research intervention that is difficult to isolate, using multiple sources of evidence and competing explanations.	Assess the contribution according to the evidence; express it as a quantitative impact percentage only where there is an appropriate basis.

We determine sample size according to the change that matters for the decision, variability, assignment unit, expected attrition and design. We therefore do not choose a single number for all programmes. We disclose primary outcomes, the analysis plan and amendments, then report differences and uncertainty. Findings discovered during analysis are distinguished from outcomes specified in advance for testing.[93] [107]

D. Principles of Economic Comparison

We standardise the target group, scope, period, quality and direction of improvement to make economic comparisons meaningful. We then compare resource costs and outcomes between two options and calculate the additional cost per additional unit of improvement.

We examine the cost difference and outcome difference before calculating their ratio. An option is favoured when outcomes improve and costs fall, and less favourable when outcomes deteriorate and costs rise. When both rise or both fall, a trade-off is required. The ratio becomes unstable as the outcome difference approaches zero; in that case, cost, outcome and uncertainty are reported separately.[38]

We distinguish consumed resources from payments, transfers and financing, and separate value added, profit and payments collected. We prevent double counting of effects between individuals and enterprises, or between time savings and the output produced by using that time. Each programme study specifies its price year, time horizon and parameters and explains their selection. This paper does not prescribe a discount rate or a general implementation cost for all applications.[44] [38] [94] [95]

E. Rules for the 2024–2026 Progress Dashboard

Each dashboard row assesses a specific dimension within a defined body of evidence. Its sheet records the baseline, observation year, latest value or event, documented source, evidence type and comparability. It then identifies the direction of change, implementation stage, strength of evidence and implications for strategic action. New information may expand our understanding of reality without establishing a change in the year of publication. We therefore distinguish the event date from its publication date.

Official announcements are read according to the rule in Section 1.7. A published news item establishes that an announcement occurred and its scope. The legal text, completed operation and impact each require their own evidence. If only a launch announcement is available, that stage is explicitly named in the dashboard and distinguished from the adoption of a text examined in full.

Table A3–5 **Rules for Classifying Change, Implementation Stage and Strength of Evidence**

Description	When is it used?
Documented progress within its scope	When two comparable observations exist, or a dated transition from preparation to operation or use is documented, with the scope of the judgement specified.
Partial progress	When improvement in a component or a limited application is established, but data are insufficient to assess coverage or other components.
Mixed picture	When relevant components move in different directions. They are presented separately without hiding their differences in an arbitrary average.
Approximate stability or specific deterioration	When a consistent measure is stable or declines, specifying whether this is a numerical change or a relative decline in ranking, without interpreting its cause.
Insufficient evidence	When a valid baseline, consistent outcome measure or usage data are absent. The case remains unresolved rather than being recorded as zero or failure.
Implementation stage	Framework, capability, operation, use, outcome or impact, according to the highest stage established by the evidence, rather than the maturity of entire sectors.
Strength of evidence	Strong for establishing a specific claim through a direct text or a published official announcement within its scope; moderate when administrative results require coverage clarification; insufficient for generalisation without a suitable comparator or method.

These judgements represent a research interpretation of the cited sources. If adopted institutionally, they should be reviewed by specialists and any material differences in interpretation disclosed. They are neither an official classification nor an officially approved independent review.

Calculating Change

Percentage change is calculated as follows:

$$(\textit{Latest value} - \textit{baseline value}) \div \textit{baseline value} \times 100$$

This formula requires a consistent quantity and a non-zero baseline. Differences between percentages are expressed in percentage points, and differences in index scores in points. Rank differences are reported as positions, alongside the number of economies. A change in rank remains distinct from a growth rate.

Based on Table 4–6, research expenditure increased by approximately 18.2%, researcher headcount by 34.0%, and full-time equivalents per million people by 71.3%. Tahawul performance rose by 21 percentage points and satisfaction by one percentage point. The connectivity score difference between the 2024 and 2026 editions was −0.1 points. Each comparison is interpreted within its scope and coverage.[77] [53] [11] [82] [113]

We read each of the eleven dimensions within its own scope. They are not aggregated into an average or composite index because they overlap and differ in data, stages and importance. Nor are there published weights or reference points justifying conversion into a transformation percentage. A composite index could be developed later as an independent measurement project, specifying statistical classification, coverage and comparability and testing sensitivity. Directly converting the descriptive scale into a score out of one hundred does not achieve that purpose.

APPENDIX IV

Alignment of the Directions with Oman Vision 2040 and the Eleventh Five-Year Plan

What Is Requested of Entities, Where It Fits within the Plan, and What Requires a New Decision

A. What the Paper Asks of Each Entity

The table sets out proposed work within entities' existing programmes. Each initiative requires a cost and feasibility assessment and approval by the competent authority; the existence of a programme does not mean the initiative has been approved. The handover points in Table 7–2 and the proposal register in this appendix clarify implementation responsibilities.

Table A4–1 **Proposed Work for Entities Responsible for Programmes**

Entity	Related programmes	What the paper requests
Ministry of Labour	7-1, 7-2, 7-3, 7-8, 7-13, 12-1, 12-4	Organise the transition between the standards programme and Ejada, and use occupational standards as a reference for competency assessment in promotion, on a trial basis in occupations selected by the Ministry. Add measures of actual demand to the sharing economy programme. Link Tahfeez incentives to improvements in specific processes whose productivity effects can be measured.
Ministry of Education	1-1, 1-5, 1-13	Prepare the evidence base and policy-development dossier for the National Knowledge Economy Policy in 2026–2027, so that drafting can begin in 2028–2029 under programme 1-13. Contribute to decisions on the relationship between competency certificates and the framework, and on the conditions for registration or linkage, while preserving the decision-maker's authority.
Ministry of Commerce, Industry and Investment Promotion	6-6, 8-1, 8-6, 8-8, 8-11, 8-27	Connect existing digital export pathways with broader knowledge services in coordination with sector entities, and address demonstrated gaps; measure whether industrial innovation reaches a user; and track process improvements in factories under the industrial efficiency programme.
Ministry of Transport, Communications and Information Technology	6-14, 6-16, 8-17, 12-7	Link digital transformation and artificial intelligence support to a specific process within an enterprise, and measure improvement and its continuation after support ends.
Ministry of Economy	5-3, 5-5	Coordinate handover points between programmes in the current phase, review approved indicators and add missing usage measures to the economic decision-making data system.
Authority for Projects, Tenders and Local Content, and the Small and Medium Enterprises Development Authority	6-9, 8-15	Review the coverage of knowledge services in existing local content instruments, address demonstrated gaps, and measure executed contracts and payment times.

Entity	Related programmes	What the paper requests
Central Bank of Oman	8-9	Distinguish the regulatory framework, bank practices and enterprise readiness when measuring access to finance.
Secretariat General of the Council of Ministers	12-5	Measure a single business licensing journey through to completion across entities.
Research and Innovation Authority	1-2	Use whether an applied project reaches its user as a measure of success.
Ministry of Justice and Legal Affairs	11-8	Use the regulatory sandbox to test unresolved regulatory instruments before wider adoption.

A programme dossier, as specified in Table 7–3, is prepared for each initiative, with costs estimated during preparation. It is then submitted to the competent decision-maker for approval.

B. Strategic Programmes Accommodating the Directions

The table maps the directions to the twenty-eight programmes selected for primary alignment. For each, it identifies the responsible entity and whether it falls under the first work programme (2026–2027) or the second (2028–2029). This count applies only to the primary alignment scope. Supporting links appear in Chapter 6 and are explained in Section 1.10; the table does not list every relevant programme.

Programme numbers follow the Strategic Programmes volume issued by the Ministry of Economy in 2026. The first number denotes the Oman Vision 2040 priority under which the programme falls: 1 for education, learning, scientific research and national capabilities; 5 for economic leadership and management; 6 for economic diversification and fiscal sustainability; 7 for the labour market and employment; 8 for the private sector, investment and international cooperation; 11 for legislation, the judiciary and oversight; and 12 for governance of the State Administrative Apparatus, resources and projects.[126]

Table A4–2 **The Six Directions and Corresponding Programmes in the Plan**

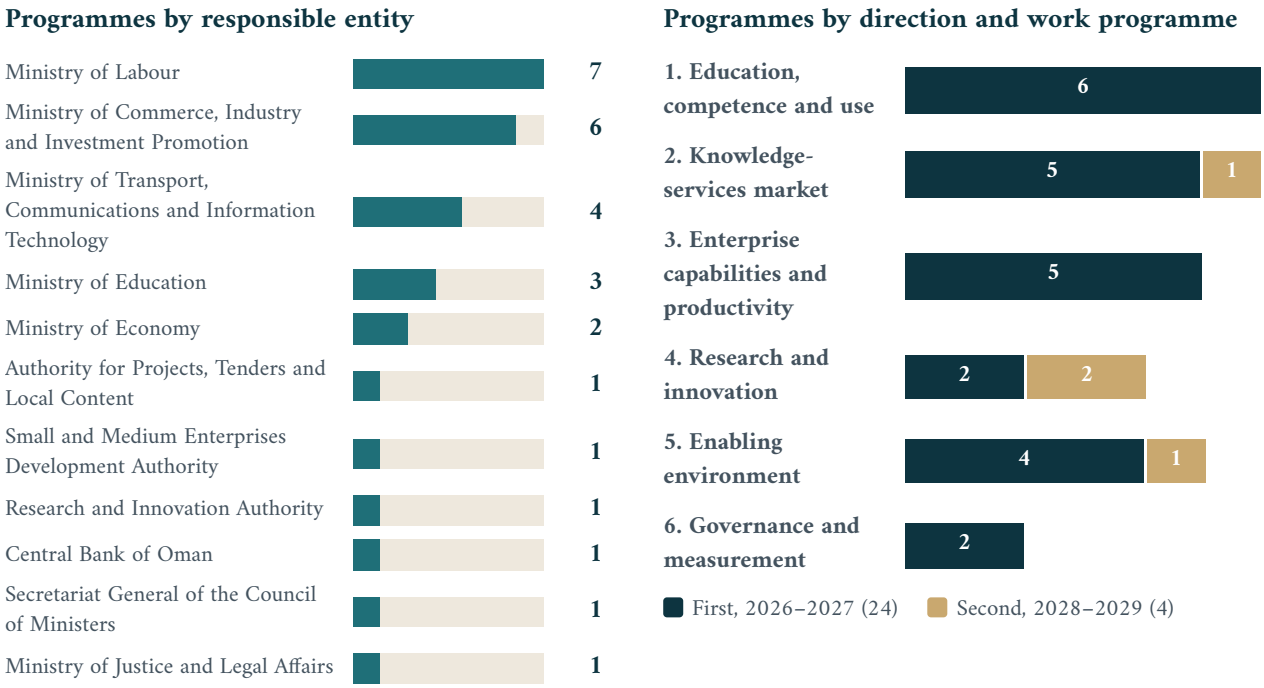
Direction	Strategic programme	Responsible entity	Work programme
1. Education, competence and use	7-2: Applying Occupational Standards in Economic Sectors	Ministry of Labour	First
1. Education, competence and use	12-4: Developing the Ejada System to Enhance Government Employee Performance	Ministry of Labour	First
1. Education, competence and use	1-1: Developing and Governing the Education Sector	Ministry of Education	First
1. Education, competence and use	1-5: Diversifying Education Pathways	Ministry of Education	First

Direction	Strategic programme	Responsible entity	Work programme
1. Education, competence and use	7-8: Developing the Training System	Ministry of Labour	First
1. Education, competence and use	12-1: Strengthening Strategic Human Resource Planning in Government	Ministry of Labour	First
2. Knowledge-services market	7-13: Empowering National Talent in the Sharing Economy	Ministry of Labour	Second
2. Knowledge-services market	7-1: Accelerating Employment of Jobseekers in the Public and Private Sectors and Freelancing	Ministry of Labour	First
2. Knowledge-services market	6-9: Strengthening the Local Content Ecosystem	Authority for Projects, Tenders and Local Content	First
2. Knowledge-services market	8-15: Enhancing SMEs' Benefit from In-Country Value	Small and Medium Enterprises Development Authority	First
2. Knowledge-services market	8-11: Building a National Ecosystem for Digital Trade and Services	Ministry of Commerce, Industry and Investment Promotion	First
2. Knowledge-services market	8-6: Enabling Exports	Ministry of Commerce, Industry and Investment Promotion	First
3. Enterprise capabilities and productivity	6-14: Digital Transformation of Economic Sectors	Ministry of Transport, Communications and Information Technology	First
3. Enterprise capabilities and productivity	6-16: Deploying Artificial Intelligence and Advanced Digital Technologies	Ministry of Transport, Communications and Information Technology	First
3. Enterprise capabilities and productivity	8-17: Empowering Omani Technology Companies	Ministry of Transport, Communications and Information Technology	First
3. Enterprise capabilities and productivity	6-6: Empowering Omani Industries and Raising Their Efficiency	Ministry of Commerce, Industry and Investment Promotion	First
3. Enterprise capabilities and productivity	7-3: Tahfeez Programme to Support High-Performing Enterprises	Ministry of Labour	First
4. Research and innovation	1-2: Developing the Research and Innovation Ecosystem	Research and Innovation Authority	First
4. Research and innovation	1-13: Strengthening the Knowledge Economy	Ministry of Education	Second
4. Research and innovation	8-8: Industrial and Technological Innovation	Ministry of Commerce, Industry and Investment Promotion	First
4. Research and innovation	8-27: Activating the National Intellectual Property Plan	Ministry of Commerce, Industry and Investment Promotion	Second

Direction	Strategic programme	Responsible entity	Work programme
5. Enabling environment	8-1: Developing and Strengthening the Investment Environment	Ministry of Commerce, Industry and Investment Promotion	First
5. Enabling environment	8-9: Developing the Financial Ecosystem to Support SME Growth	Central Bank of Oman	First
5. Enabling environment	12-5: Simplifying Procedures and Improving Government Services	Secretariat General of the Council of Ministers	First
5. Enabling environment	12-7: Comprehensive Government Digital Transformation	Ministry of Transport, Communications and Information Technology	First
5. Enabling environment	11-8: Building a Forward-Looking Regulatory Sandbox	Ministry of Justice and Legal Affairs	Second
6. Governance and measurement	5-3: Managing Data and Information Supporting Economic Decision-Making	Ministry of Economy	First
6. Governance and measurement	5-5: Supporting Improvement in Oman's Performance in International Competitiveness Indicators	Ministry of Economy	First

The table shows how the directions link to programmes within the limits of what the Plan sets for its programmes, entities and initiatives. Mandates remain as defined by existing frameworks. The National Knowledge and Digital Economy Authority is a proposed institutional option for study; it changes programme lead entities only through a competent decision.

Figure 36 **The Twenty-Eight Programmes: Entities, Directions and Work Programmes**



Calculated from Table A4–2. The count covers only the primary alignment scope and does not list every relevant programme.

C. Proposals and Requirements for Their Activation and Approval

The table presents fourteen proposals of different types: adopting a framework, assigning coordination authority, activating and expanding an existing instrument, or developing a procedure requiring testing. The list does not imply that all instruments are absent or that every row requires new legislation or a new programme. The first four rows overlap with Decisions One, Two, Four and Five, and the fifth row with Decision Seven, in Section 6.11. Actual arrangements should be reviewed before determining the required addition, the decision and the financial implications, since the absence of a published decision in the sources does not rule out internal arrangements.

Table A4–3 **Proposals: Required Additions and Decision Pathways**

Proposal, classification and required addition	Decision pathway through the competent authorities
Adopt a reference framework: the six directions for integrating the Plan's programmes; Decision One.	The government, after reviewing links with approved frameworks, without automatically adding a separate programme.
Institutional study and coordination authority: compare the two leadership options, with the Ministry of Economy continuing to follow up on handover points in the current phase; Decisions One and Two, in line with Section 7.2.	The government commissions the study through the Office of the Deputy Prime Minister for Economic Affairs, with the Ministry of Economy and the competent entities, then approves the option, its powers and resources through a separate legal instrument.

Proposal, classification and required addition	Decision pathway through the competent authorities
Activate governance: name a lead, two parties, an output and evidence of use for each selected handover point; Decision Four.	Entities responsible for programmes, under the approved mandate and Ministry of Economy coordination in the current phase.
Complete initiative approval instruments: a dossier covering need, alternatives, feasibility, rights and decision thresholds; Decision Five.	The Ministry of Economy and the Ministry of Finance, within existing approval instruments and after verifying their coverage.
Develop and test: an individual competency assessment framework linked to occupational standards and the approved promotion system; Decision Seven, in line with Section 6.3 and Appendix V.	The Ministry of Labour under programmes 7-2 and 12-4, with the relevant entities and employment systems, obtaining any legally required approvals.
Activate and expand: competency specifications and job profiles drawing on occupational standards where available.	The Ministry of Labour and relevant entities under programme 12-1, within their mandates and applicable provisions.
Clarify linkage: the relationship of competency certificates to the national qualifications framework and register, according to the certificate's purpose.	The Ministry of Labour and the Oman Authority for Quality Assurance of Education, without treating every assessment as a qualification that is automatically listed.
Legal review: incorporate a competency reference into instruments governing appointment and promotion where supplementation is needed.	Authorities responsible for legislation and employment regulation, under applicable provisions and any approved amendments, without assuming that a law has been enacted or remains a draft.
Expansion conditional on a coverage review: support and scholarships for listed professional qualifications under general eligibility rules.	The authority responsible for scholarships and funding, after reviewing existing coverage, feasibility and provider neutrality.
Complete coverage: review knowledge services in local content instruments and add what is demonstrably missing; Section 6.4.	The Authority for Projects, Tenders and Local Content and the Small and Medium Enterprises Development Authority, with the Oman Investment Authority for its own instruments, under programmes 6-9 and 8-15.
Connect and expand: export knowledge services through digital industry and trade pathways and Hadatha, and extend coverage to other professional services.	The Ministry of Commerce, Industry and Investment Promotion, with sector entities, under programmes 8-6 and 8-11 and existing instruments.
An instrument proposed for testing after a coverage review: research vouchers and small testing contracts, measuring adoption and preventing duplicate support.	The Research and Innovation Authority and the Ministry of Commerce, Industry and Investment Promotion, under programmes 1-2 and 8-8, subject to the required approvals.
Review and develop: fees proportionate to enterprise size and an indicator of total compliance cost.	The Ministry of Finance and fee-collecting entities, after reviewing existing amendments and exemptions and measuring the actual burden.
Simplify and connect: proportionate financial disclosure for small enterprises, separating technical assistance from credit decisions.	The Central Bank of Oman and financing entities, each within its mandate, under programme 8-9, while preserving independent risk assessment.

Decision Three complements this register through the review and completion of monitoring indicators. Decision Six complements it through policy preparation under programme 1-13 and its approved timetable. Every initiative requires its own dossier and the necessary financial and regulatory approvals, even when it falls within an existing programme.

D. Links Between the Eight Digital Programmes and the Six Directions

Table A4–4 **Analytical Alignment Complementing the Five-Year Plan Programmes**

Direction	Principal related digital programmes	The paper's proposed addition
1. Education, competence and use	Talent across all eight programmes; directly linked: digital industry, artificial intelligence, cybersecurity and space.	Link training and development to demonstrated capability and its use, with impact evaluated by cohort and occupation.
2. Knowledge-services market	Digital industry and trade, the cybersecurity industry, financial technology and space applications.	Track trials, contracts, payment, repeat business and exports, and extend coverage to professional services beyond technology.
3. Enterprise capabilities and productivity	Artificial intelligence, digital industry and trade, and financial technology, supported by infrastructure and security.	Shift support and evaluation towards process improvement and the persistence of outcomes after assistance ends.
4. Research, innovation and use	Artificial intelligence, space, digital industry and cybersecurity.	Connect users with research, testing, rights and finance through existing capabilities.
5. Enabling environment	National digital transformation, infrastructure, financial technology, and regulatory and security enablers.	Measure the journey, quality, cost and access by location and group.
6. Governance, measurement and learning	Governance of the national programme and the eight programmes, and data on their outcomes.	Complete the links between digital activity, education, research, work and markets, without duplicating offices and reports.

These links do not constitute an official allocation of mandates or the creation of programmes. They should be read alongside Table 3–5 and the outcome measures in Table 8–3a, and matched against entities' indicators and arrangements before any procedure is added.[128]

APPENDIX V

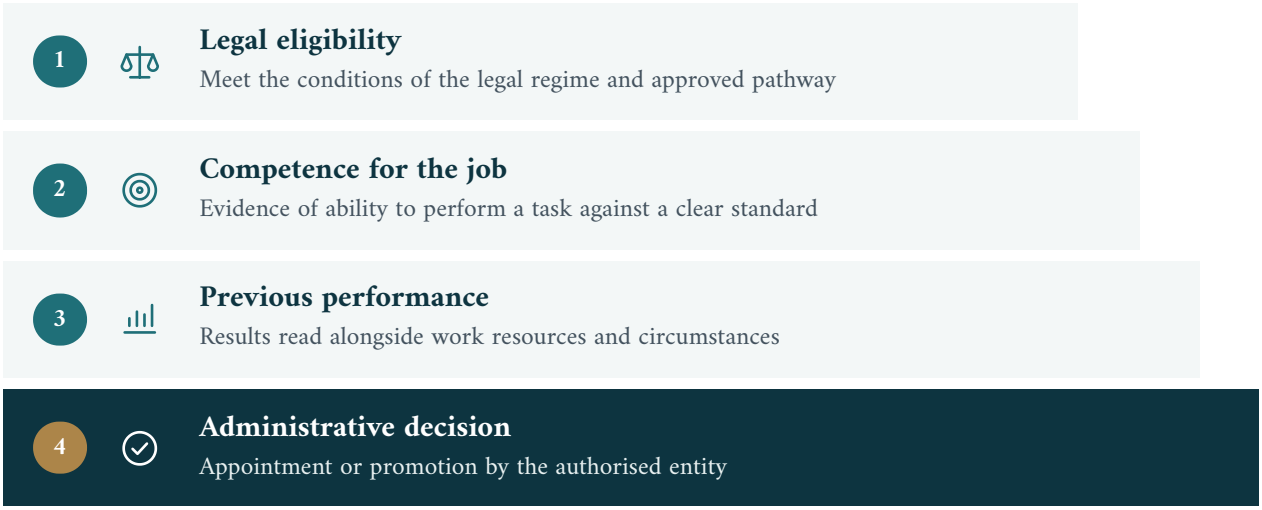
An Indicative Framework for Assessing Individual Competencies

A. Purpose and Limits of Use

This framework turns job requirements into evidence suitable for assessment, comparative selection and development. It is a proposal for discussion and testing by the competent authorities, not an approved national standard or an amendment to appointment, promotion or occupational licensing conditions. It is to be used within applicable law and employment and professional regulations, in connection with national standards where available, the Ejada system and approved promotion pathways.[21] [122]

Four matters are distinguished: meeting legal eligibility requirements; possessing competence required for the job; previous performance results; and the administrative decision under the approved pathway. A person may hold the required qualification yet need to demonstrate a specific skill, or possess assessable experience without being exempted from a legal condition. Professional licensing also differs from a qualification listed in the national qualifications framework and from a comparative selection decision.

Figure 37 **Eligibility, Competence, Performance and Decision**



Training and assessment support the decision within its legal basis and rules.

Appendix V. An indicative framework for testing, not an approved national standard or an automatic exemption from a legal requirement.

B. Developing the Job Competency Specification

The entity begins with the job description, actual tasks, outcomes and level of responsibility. It then links these to the current occupational standard where available and identifies specialist, leadership and behavioural requirements not covered by it. Practitioners, employers, human resources and the regulator participate according to their mandates. The specification is reviewed periodically as tasks or technology change.

Table A5–1 **Components of the Proposed Competency Profile**

Component	What the profile records
Job and decision	Title, level, tasks, appointment decision or promotion pathway, legal regime and eligibility conditions.
Reference documents	The occupational standard, its edition and scope, the job description and any licensing requirements, identifying local additions and their rationale.
Required competencies	Technical, professional, digital and behavioural capabilities, and leadership capabilities where needed, linked to specific tasks and outputs.
Proficiency level	What the candidate can perform, to what standard of quality and with what degree of independence and responsibility, distinguishing critical requirements from those that can be developed.
Evidence and assessment	Method of demonstration, work sample, assessment criterion, weighting of each component if used, number of assessors and conflict-of-interest controls.
Rights and review	Accessibility and necessary support, candidate notification, data rules and appeals, decision authority and the evidence's validity period.

C. Assessment Evidence and Method of Judgement

The instrument is selected according to the competence: a work sample or technical task simulation; a structured interview with common questions and criteria; a documented portfolio; performance observation; or outcome data attributable to the candidate's role. Qualifications and experience are authenticated separately. Performance reports form part of a range of evidence, taking account of differences in task difficulty and resources. A general test, unstructured interview or training-hour count cannot represent every competence.

The trial may use a four-category descriptive scale: required performance not demonstrated; performance requiring supervision; independent performance meeting the requirement; and performance exceeding the requirement through improvement or guidance of others. Each judgement is accompanied by reviewable evidence. These are proposed categories, not approved grades, and their suitability and consistency of interpretation should be tested before use in a consequential decision.

Eligibility conditions, assessment instruments, criteria and selection rules are published before the competition. Weights and thresholds are determined according to the job and legal authority, without assuming a uniform national distribution of weights. A high overall score cannot compensate for failure in a critical safety,

integrity or professional responsibility requirement. A body independent of the original assessor reviews borderline and conflicting cases, and more than one assessor is used for high-impact tasks.

D. Connecting Assessment with Development and the Decision

The result identifies demonstrated competence and development needs. A technical, professional or leadership learning plan is then prepared around a specific gap, with alternatives suited to experienced candidates and access needs. After learning, the required capability is reassessed through an appropriate task. Recognition of prior learning is available according to its purposes and rules; it does not automatically confer a qualification, licence or promotion.

In appointments, the evidence supports comparative selection within the prescribed conditions. In the accelerated pathway, it tests claims of exceptional ability and their persistence. In the flexible pathway, it supports consistent comparison between candidates. In the special pathway, it helps substantiate need, scarcity and expected value without replacing the required approval. The authorised entity makes the final decision and explains its basis within disclosure and data protection limits.

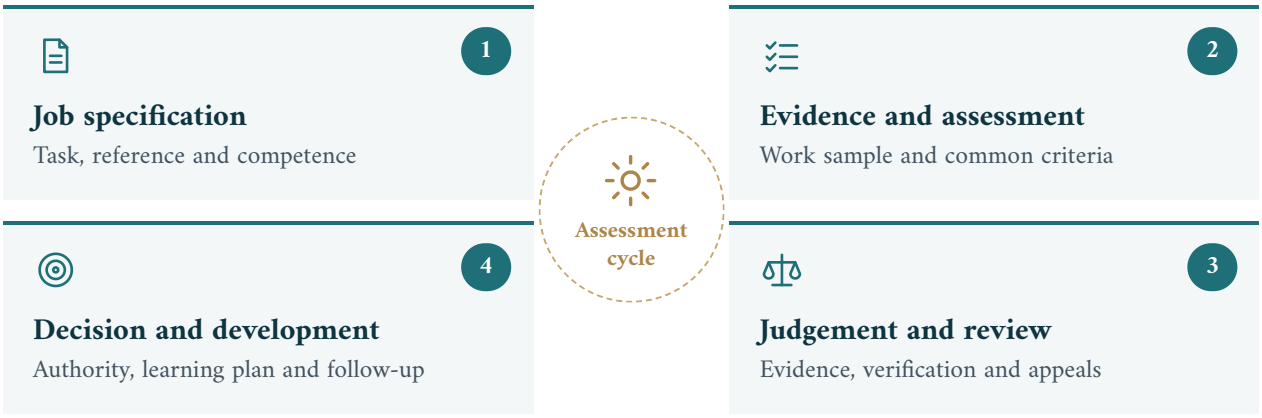
An exception to the minimum practical-experience requirement under Article 12(e), owing to the scarcity of that experience or the candidate's rare scientific expertise, is documented in a separate register: the condition waived, legal basis, approval pathway, reason, evidence of capability and follow-up outcome. The exception is not assumed to waive other conditions. Its analysis is kept separate from the special promotion pathway and any other exception based on different authority. Leadership positions should have common leadership competency specifications and a selection committee that includes a member from outside the unit.[148]

E. Quality, Rights and Data Governance

Governance separates training provision, candidate assessment and appeal decisions as far as possible and requires disclosure of interests. Assessors are trained on the criteria and a common sample of their judgements is reviewed. Candidates may obtain an explanation of results, correct data and appeal to a body other than the body that issued the original judgement, within approved and published timelines and procedures. Fair arrangements are provided for persons with disabilities and to address material differences in access to training and development.

Data are limited to what is necessary for assessment and decision-making, with defined rules for access, correction, retention and deletion and an audit trail. Identifying information is separated from analysis wherever possible, and personal data protection provisions are observed. A consequential final decision must not be made automatically on the basis of an algorithmic classification without human verification and approved safeguards.[57] [71]

Figure 38 **The Competency Assessment and Decision Quality Assurance Cycle**



Appendix V. Competence and outcomes are reviewed again. Weights and criteria are approved according to the job and legal authority.

F. Testing Before Wider Adoption and Measures of Success

Testing begins in occupations ready for standards-based assessment, within a scope approved by the competent authorities. Structured judgements are compared with the existing method, examining assessor consistency, time and cost burdens, fairness and appeals. During initial validation, the research trial creates no separate employment obligation. Once suitability is established and legal authority and resources are approved, decisions can be made on use and gradual expansion.

Table A5–2 **Indicators for Testing the Framework and Evaluating Its Value**

Area	Indicator and meaning
Coverage and validity	Jobs with valid competency specifications and an up-to-date reference suited to the task, not merely the number of profiles.
Quality of judgement	Assessor agreement and explanations for disagreement, evidence authenticity, and the instrument's ability to distinguish required performance levels.
Use and cost	Decisions that actually used the evidence, and time and cost for candidates and the entity, separating assessment from decision approval.
Fairness and rights	Differences in access, completion and outcomes between groups, appeals, and the proportion of judgements revised and the reasons for revision.

Area	Indicator and meaning
Subsequent impact	Performance quality following appointment or promotion, retention and skills development, using an appropriate comparison wherever possible.
Exceptions	The extent of exceptions, their justification and approval pathway, and subsequent performance, without assuming that differences or exceptions cause poor performance.

Success means better selection, development and performance while protecting rights and keeping costs proportionate. A higher pass rate alone does not establish the framework's success. Suitability for wider adoption is determined after a relatively independent evaluation of the method and results, and review by the competent authorities, practitioners and beneficiaries.

SOURCES

References and Sources

This list brings together the paper's sources under fixed numbers cited in the text. Each entry identifies the parts of the source drawn on and the limits of their use, with verified online links to the sources.

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• Online source 1 • Online source 2

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• Online source

15 Oman Investment Authority. Official "Local Content" page. Covers local content and supply chain instruments; SMEs' 19.8% share of supply chain expenditure in 2024, confirmed by the Authority's statement published in May 2025 [116]; and research, development and innovation principles since 2023. The data concern the Authority's scope, not knowledge procurement or the entire national economy. Older instruments are treated as part of the baseline.
• Online source

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• Online source 2

18 Official Gazette; text reproduced on Qanoon.om. Royal Decree 53/2023 issuing the Labour Law, 2023. Relevant passages: Article 1 definitions, including remote work, and Articles 17, 19, 20–22, 28, 43 and 54. The Law has been amended up to and including Royal Decree 66/2026. The scope of the employment relationship and eligibility to practise are reviewed for each application, without inferring a uniform licensing system for all occupations. • Online source

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• Online source

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21 Royal Decree 120/2004 issuing the Civil Service Law and its amendments; text reproduced on Qanoon.om. Relevant passages: Articles 6, 12(e), 15, 20, 27–30 and 33; merit-based appointment, and promotion based on merit comprising competence at 70% and seniority at 30%. • Online source

22 Oman Government Portal. Service for listing a qualification in the Oman Qualifications Framework; updated 28 March 2025. Listing procedures and criteria based on level and learning volume, institutional eligibility, programme licensing where applicable, learning outcomes, assessment and quality assurance. The page's update date does not establish the service's launch date or listing volume. • Online source

23 Oman News Agency. Report on the launch of Tamkeen to prepare SMEs for procurement and local content, 16 December 2025, and report on its implementation in Al Dhahirah, 24 December 2025. The reports establish the availability of supplier development and consultancy related to tenders and local content. Participation does not establish that a contract has been won or income sustained, and the two reports do not represent separate initiatives. • Online source 1 • Online source 2

24 Ministry of Labour. Decision 317/2025 determining the minimum annual increment and regulating its payment to Omanis working in the private sector. Issued 18 June 2025, published 27 July and effective the following day. Links the minimum increment to performance report results and provides an appeal right, subject to eligibility conditions. It does not establish that all performance reports are based on National Occupational Standards. • Online source

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26 Royal Decree 13/2026 defining the Ministry of Economy's mandates and approving its organisational structure, 12 January 2026; text reproduced on Qanoon.om. Used to explain the Ministry's mandates and organisation and support coordination in the current phase within existing mandates. The institutional leadership model, its organisation and resources remain matters for government decision after the comparative study. • Online source

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28 OECD. The Knowledge-Based Economy, 1996. Relevant passages: pp. 7 and 11–14; definition, learning and knowledge networks. • Online source

29 Royal Decree 9/2021 concerning the Oman Authority for Academic Accreditation and Quality Assurance of Education, 2021. Relevant passage: Annex 1, mandates 1–7. • Online source

30 Royal Decree 27/2023 issuing the Higher Education Law, 2023. Relevant passages: Articles 3, 14, 16 and 34, including admission through recognition of experience. • Online source

31 Ministry of Higher Education, Research and Innovation; text reproduced on Qanoon.om. Ministerial Decision 1/2026 issuing the Executive Regulation of the Higher Education Law. Issued 7 January 2026, published 11 January and effective 12 January. Relevant passages: Article Two of the issuing decision and the compliance period, and Articles 2 and 7(1)(c) of the Regulation, respecting the scope applicable to institutes and academies. • Online source

32 OECD and Eurostat. Oslo Manual: Guidelines for Collecting, Reporting and Using Data on Innovation, 2018. Relevant content: the general definitions of innovation and business innovation and bringing a new or improved product or process into use. • Online source

33 World Bank. The Innovation Paradox: Developing-Country Capabilities and the Unrealized Promise of Technological Catch-Up; publisher's presentation, 3 October 2017. Relevant content: the role of managerial and organisational capabilities in absorbing knowledge and innovation. Findings are not generalised to all Omani enterprises or used to estimate a local return. • Online source 1 • Online source 2

34 OECD. Definition of the GDP per hour worked indicator. Explains hourly labour productivity and its relationship to capital, technology and organisation. Comparisons account for activity units, hours and prices; productivity is not interpreted as worker effort alone. • Online source

35 UNCTAD. Science, Technology and Innovation Policy Review: Oman, 3 November 2014. Relevant content: the review's objectives and publication details. • Online source

36 World Intellectual Property Organization. Announcement of the Global Innovation Index 2026 release date, and Oman News Agency's report on the results released on 29 September 2026. The full Oman profile in reference [150] is used for ranks and confidence intervals. • Online source 1 • Online source 2

37 UNCTAD. A Framework for Science, Technology and Innovation Policy Reviews, 15 May 2019. Relevant content: a systems perspective, capabilities and linkages, stakeholder participation and adaptation to national context. • Online source

38 HM Treasury. The Green Book: Central Government Guidance on Appraisal and Evaluation, 2026 edition. Relevant content: reference scenarios, option generation, public value, costs and financing, the five dimensions of the business case, risks, uncertainty and sensitivity. Used through analytical adaptation, without importing UK parameters or fiscal rules into Oman. • Online source

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41 Harvard Kennedy School, Building State Capability programme. Introduction to Problem Driven Iterative Adaptation tools, 25 October 2018. Relevant content: learning and adaptation while solving problems and developing instruments. Used conceptually; it does not imply new field trials were conducted for this paper. • Online source

42 OECD. Strategic Foresight Toolkit for Resilient Public Policy, 2025. Relevant content: testing assumptions, scenarios and the robustness of options. The paper's scenarios are possible conditions for testing design, without estimates of their likelihood. • Online source

43 UK Government. The AQuA Book: Guidance on Producing Quality Analysis for Government, 2025 edition. Relevant content: verification and validation of analysis, documentation of assumptions and uncertainty, and review. Use of the reference does not mean that this paper underwent an independent external review. • Online source

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47 Ministry of Higher Education. Decision 21/2015 on the Regulation for Recognising Non-Omani Higher Education Institutions and Equating Their Qualifications; historical text. Article 16 addresses study conditions for experienced applicants. Used to establish the pathway's earlier roots, not to treat the Regulation as still effective after replacement by Regulation 1/2026. Admission to study on the basis of experience differs from automatic award of a qualification or licence. • Online source

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51 World Bank. Human Capital Index 2020: Oman country brief, October 2020; pre-pandemic data. Relevant passage: p. 1, definition and education data. • Online source

52 World Intellectual Property Organization. Global Innovation Index 2024: Oman economy profile; differing observation years. Relevant passages: p. 1 for overall, input and output ranks, and p. 8 for graduates and research and development. • Online source

53 International Telecommunication Union. ICT Development Index 2024; reference period 2022. Relevant passages: p. 3, Box 2; p. 5, Oman row in Table 1; and p. 17, reference period. • Online source

54 Royal Decree 31/2023 issuing the School Education Law, 2023. Relevant passages: Articles 2, 7, 8, 10 and 50, including professional licensing and standards for educational occupations. • Online source

55 Royal Decree 52/2023 issuing the Social Protection Law, 2023. Relevant passages: Articles 68 and 71, distinguished from the work injury branch. • Online source

56 Royal Decree 69/2008 issuing the Electronic Transactions Law, 2008. Relevant content: provisions on electronic records, messages and contracting. • Online source

57 Official Gazette; text reproduced on Qanoon.om. Royal Decree 6/2022 issuing the Personal Data Protection Law. Articles 13–19 and 23 are among the passages used for the baseline period. Subsequent application is read with the amendment [74] and applicable regulations, rather than treating the text as unamended. • Online source

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59 Ministry of Transport, Communications and Information Technology. Report on the launch of Sas for Excellence, 3 June 2026. Relevant content: partners, wage, liquidity and contracting instruments, and company selection criteria. • Online source

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61 Oman Authority for Quality Assurance of Education. "About the Authority: Mandates and Organisational Structure"; page available at the research cut-off date, in light of Royal Decree 12/2026. Relevant content: mandates, structure, quality, qualifications and professional licensing for educational occupations. • Online source

62 Oman Association for Chartered Public Accountants (OACPA). Membership and professional classification page, available on 27 September 2026; the service's launch date is not established here. Relevant content: verification of qualifications, experience and skills, and application links. • Online source

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67 Oman Daily. Report on the Ministry of Finance's two-stage review of government fees, 13 December 2022. The first stage covered 908 fees and the second 739; a total of 845 fees were reduced, abolished or merged. • Online source

68 Royal Decree 28/2009 issuing the Income Tax Law and its amendments, including Royal Decree 9/2017, Article 159 bis and subsequent provisions on a reduced rate and conditional tax exemption; Ministerial Decision 14/2019 amending the Executive Regulation, Articles 159–164, on exemption conditions and continued treatment when thresholds are exceeded; via Qanoon.om. Supplemented by Oman Daily's 2022 report on the Tax Authority's invitation for SMEs to register to benefit from the 3% rate. • Online source

69 Oman Daily. Report on Oman Investment Authority's launch of four local content programmes, 27 February 2023. These include the first edition of the mandatory list, comprising 25 services and 103 products, and the supplier development programme. • Online source

70 Secretariat General of the Tender Board. Mandatory list supporting local products and industries and occupations reserved for Omanis; second update. Oman Daily, 4 November 2024: 2,084 products bearing the national product identity, 127 SMEs and 249 Omanised jobs. Read alongside the Local Content Regulation issued by Decision 174/2023, Article 8 on issuing and updating the list. Under Royal Decree 57/2025, the Secretariat General became the Authority for Projects, Tenders and Local Content. [104] • Online source 1 • Online source 2

71 Sultanate of Oman; text reproduced on Qanoon.om. Royal Decree 39/2025 issuing the Electronic Transactions Law. Issued 9 April 2025 and effective 14 April 2025. Relevant content: issuing provisions, documents, contracts, signatures and trust services. • Online source

72 Sultanate of Oman; text reproduced on Qanoon.om. Royal Decree 35/2025 establishing the Investment and Commerce Court and issuing its Law. Issued 23 March 2025 and effective 1 October 2025. Relevant passages: Article Five of the issuing decree and Article 11 of the Law. • Online source

73 Ministry of Transport, Communications and Information Technology. Statement dated 1 June 2026 on the Law on Combating Information Technology Crimes, Royal Decree 61/2026. Used to establish legislative development and its broad digital protection scope, with applicable articles to be reviewed during implementation. • Online source

74 Official Gazette; text reproduced on Qanoon.om. Royal Decree 68/2026 amending certain provisions of the Personal Data Protection Law. Issued 3 September 2026, published in Official Gazette No. 1664 on 6 September and effective the following day. Relevant content: processing scope, Article 3 exceptions, consent and its exceptions, automated processing and retention. Detailed applicability remains dependent on the case and regulations. • Online source

75 Royal Decree 85/2026 ratifying the cooperation agreement with the European Organization for Nuclear Research; text reproduced on Qanoon.om. Issued 15 September 2026 and published in Official Gazette No. 1666 on 20 September. Used to establish ratification, not to measure implemented projects or establish membership of the organisation. The agreement and protocols should be reviewed when designing an application. • **Online source**

76 Oman Ministry of Foreign Affairs. Report on Royal Decree 86/2026 ratifying the Charter establishing the Digital Cooperation Organization, 21 September 2026. The Charter was signed on 5 February 2023. The report establishes issuance of the measure, not completion of deposit or a commercial or financing outcome. • **Online source**

77 International Telecommunication Union (ITU). Measuring Digital Development: The ICT Development Index 2026. 2026 edition. Relevant passages: p. 4 for interpretation limits, p. 7 for Oman's row and p. 19 for the reference period. • **Online source**

78 Portulans Institute. Network Readiness Index 2025: Oman. 2025 edition. Relevant passages: overall and component ranks and scores on pp. 1–4, and individual and business variables and unavailable values on pp. 4–5. Figures were checked against text extracted from the file. Rankings do not equal direct measurement of worker skills or enterprise productivity. • **Online source**

79 Ministry of Labour; text reproduced on Qanoon.om. Ministerial Decision 523/2025 regulating remote work. Issued 31 August 2025 and effective 9 September 2025. Relevant passages: Articles 1–4, particularly Article 2's restriction to work performed within Oman. • **Online source**

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81 Small and Medium Enterprises Development Authority. Reports on the results of the Promising Omani Startups Programme and loan portfolio approvals; official news page. Afaq report dated 7 January 2026 on 2023–2025 results: 205 enterprises and 549 jobs for Omani youth. The reported population and version of the announcement are retained; these results are not conflated with a separate report of 825 total jobs or treated as a causal effect of support. • **Online source**

82 National Centre for Statistics and Information. Results of the National Survey of Research and Experimental Development 2025; statement published in September 2026. Includes 1,242 versus 725 full-time equivalent researchers per million people, and headcounts of 18,193 versus 13,576. • **Online source 1** • **Online source 2**

83 OECD. Frascati Manual: Guidelines for Collecting and Reporting Data on Research and Experimental Development, 2015. Relevant passages: paragraphs 2.24–2.32, pp. 50–51; distinctions among basic, pure basic and oriented basic research, applied research and experimental development, without a commercial ranking of research types' value. • **Online source**

84 Gmyrek et al., International Labour Organization. Generative AI and Jobs: A Refined Global Index of Occupational Exposure. ILO Working Paper 140, 20 May 2025. Relevant content: abstract and working paper on task exposure and occupational transformation. DOI: 10.54394/HETP0387. International estimates of potential exposure, not a measurement of jobs replaced in Oman. • **Online source**

85 Development Bank. Working capital finance product page at the cut-off date. Relevant content: financing purposes, eligibility of existing customers with subsidised loans and projects new to the bank that have operated for at least one year, business plans, guarantees and transaction documents. Product availability does not establish approval of a specific application or a uniform price or cost. • **Online source**

86 Ministry of Transport, Communications and Information Technology. Statement dated 6 September 2026 on amendment of the Personal Data Protection Law by Royal Decree 68/2026, including processing scope and rights. Read alongside the amendment itself [74], not as a substitute for the text defining the legal provision's scope. • **Online source**

87 Ministry of Transport, Communications and Information Technology. Detailed Sas for Excellence page at the research cut-off date; objectives, selection criteria and support instruments. Covers companies with growth and scaling capacity and instruments for wages, liquidity, company development and institutional demand. Describes design and objectives, not achieved impact or general eligibility for every freelancer. • Online source

88 Ministry of Finance. Financial Circular 1/2026 on awarding specialist work and services worth no more than OMR 5,000 to independent Omani freelancers who are not in employment, dated 10 September 2026; available in the circulars and publications library. Directs government entities and refers to a contracting procedures guide. It is a directive, not a record of contracts awarded. The index contains another circular with the same number concerning 2027 budget estimates. Read alongside the cited news report. [16] • Online source 1 • Online source 2

89 Credit Oman. Domestic trade credit and export credit insurance products; official pages, English version and FAQs. Eligibility, exclusions and compensation depend on policy terms; the product is not a general guarantee for all transactions. • Online source 1 • Online source 2 • Online source 3

90 National Open Data Portal, Ministry of Transport, Communications and Information Technology. User guide and open data availability principles. Relevant content: search, metadata, publishers, updates, versions, downloads, and the principles of completeness and privacy. The portal description does not establish complete knowledge economy data, permission for individual-level linkage or readiness for integration between entities. • Online source 1 • Online source 2

91 Ministry of Finance. Pages on initiatives and the unified government financial system, Maliyah, and a report on Ministry projects presented at the Dhofar Governorate meeting, 27 April 2025. Pages describe supply chain finance, programme and performance budgeting and the unified financial system; the report establishes that development projects were presented in 2025. Development and presentation are distinguished from completed national operation or demonstrated impact. Supply chain finance has eligibility conditions and limits and is not a universal instrument for every freelancer. • Online source 1 • Online source 2 • Online source 3

92 Ministry of Commerce, Industry and Investment Promotion. "Sanad Service Centres Complete More Than 131,000 Transactions", 19 April 2026. First-quarter 2026 results, with a network of 922 centres across governorates. Used for transaction counts and the operational channel, not comparative measurement of beneficiary journey times or unduplicated beneficiary counts. • Online source

93 HM Treasury and the Evaluation Task Force. Magenta Book Annex A: Analytical Methods for Use Within an Evaluation, May 2026. Relevant sections: A1, A1.3–A1.4, A2.1, A2.4, A2.7 and A3.3; examining mechanisms, impact and value for money. Online and print versions constitute one source. An explanation of a mechanism does not itself produce a quantitative impact estimate. • Online source

94 OECD. Annual National Accounts: Frequently Asked Questions. Relevant content: treatment of research and development as capital formation in the System of National Accounts, distinguishing the accounting standard from its implementation stage. A conceptual reference, not evidence that Oman has adopted all methodological updates or of the size of its knowledge assets. • Online source

95 US Bureau of Economic Analysis. NIPA Handbook, Chapter 6: Private Fixed Investment. Relevant passages: Table 6.1, p. 6-3, and the intellectual property products section, p. 6-37 onwards; treating software and R&D as assets rather than automatically as intermediate consumption. Used for explanation, with national measurement rules consulted in application. • Online source

96 Integrated National Financing Frameworks platform. Assessment and Diagnostics: Binding Constraints, 1 December 2020. Relevant sections: 3 and 4.1–4.3; diagnosing constraints and evidence for testing them. Analytically adapted for this paper, not a complete diagnosis of national growth. • Online source

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98 HM Treasury and the Evaluation Task Force. Test and Learn, updated 15 May 2026. Relevant sections: 3–4 and 6; testing assumptions, documenting the intervention version, and criteria for progression and adaptation before scaling. A reference for designing and evaluating later applications, not evidence of a field trial for this paper. • Online source

99 Oman Government Portal. Service for licensing freelance e-commerce activities, updated 2 July 2026; Ministry of Commerce, Industry and Investment Promotion. Availability of the channel does not determine eligibility for every profession or knowledge activity; the activity and requirements must be reviewed before application. • Online source

100 Atkin, Khandelwal and Osman. "Exporting and Firm Performance: Evidence from a Randomized Experiment". The Quarterly Journal of Economics, 2017, Vol. 132, No. 2, pp. 551–615. Relevant content: the randomised experiment among Egyptian rug producers, learning, quality and profits, and the distinction between physical output and comparable measurement under standardised specifications. • Online source

101 Oman Daily. "Oman Advances 10 Places in the Global Innovation Index", 2 June 2025. Includes the statement by the Undersecretary for Research and Innovation at the Ministry of Higher Education, Research and Innovation that Oman Vision 2040 targets include placing Oman among the top 40 countries in the index by 2030 and the top 20 by 2040. • Online source

102 World Intellectual Property Organization. Intellectual property policies and tools for universities and research institutions. Relevant content: ownership, use, publication, licensing, incentives, collaboration, confidentiality and conflicts of interest. The actual rules depend on the applicable legal framework and contract. • Online source

103 Enterprise Ireland. Innovation Vouchers: programme page, terms of use and FAQs. Relevant content: eligibility of enterprises and publicly funded knowledge providers, excluded activities and the nature of research outputs. Used as a design example, without importing Irish funding amounts or conditions. • Online source 1 • Online source 2

104 Royal Decree 57/2025 renaming the Secretariat General of the Tender Board as the Authority for Projects, Tenders and Local Content, defining its mandates and approving its organisational structure; 24 June 2025, with text reproduced on Qanoon.om. Used to explain the Authority and its mandates, while the contracting entity, applicable regime and powers are examined in each application. • Online source

105 OECD. Applying Evaluation Criteria Thoughtfully, 2021. Relevant content: relevance, coherence, effectiveness, efficiency, impact and sustainability. A framework for evaluative questions, not a method for establishing causality. • Online source

106 Small and Medium Enterprises Development Authority. Official mandates page under Royal Decree 107/2020. Relevant content: financial, technical and management consultancy, enterprise capability development and links to opportunities. Each programme's eligibility and mandate still require verification. • Online source

107 UK Government and the Evaluation Task Force. Transparency in Government Evaluation Research (TIGER), updated 15 May 2026. Relevant content: documenting plans, analysis and amendments, and responsible publication. Citation does not imply that an actual trial has been registered or that UK requirements have been applied. • Online source

108 United Nations Department of Economic and Social Affairs. E-Government Survey 2022; annexes, Table A3, p. 218 of the publication. Oman and Saudi Arabia rows, with values of 0.7834 and 0.8539. Used to trace the historical comparison in the appendix, not to measure current conditions. • Online source

109 UNESCO Institute for Lifelong Learning. Recognition, Validation and Accreditation of Non-formal and Informal Learning. Used to explain how experience can be made visible, not as a substitute for Omani rules and mandates. • Online source

110 Ministry of Economy. Tenth Five-Year Development Plan 2021–2025: Main Document, 2021. Relevant passages: pp. 55, 111 and 117; stimulating labour demand and skills development, empowering the private sector and enabling SME access to finance. Directions are read as stated and distinguished from implementation outcomes. • Online source

111 Royal Decree 7/2026 establishing the Office of the Deputy Prime Minister for Economic Affairs, defining its mandates and approving its organisational structure; 12 January 2026, among decree texts published by the Ministry of Foreign Affairs. Used to show the economic coordination level in the mandate map and the level proposed for commissioning the comparative study, not to determine the division of responsibilities between the Office and the Ministry of Economy or the reporting line of the proposed authority. • Online source

112 Ministry of Labour. Ministerial Decision 44/2026 amending certain provisions of Decision 602/2025. Official Gazette No. 1632, 25 January 2026. Replaced the commencement article so that the Regulation took effect on 15 February 2026. • Online source

113 National Centre for Statistics and Information. "Research and Development Survey in Oman 2025"; 2024 data, published November 2025. Total expenditure of OMR 160.28 million, equivalent to 0.39% of GDP at current prices and 0.42% at constant prices; 13,576 researchers; and a sample of 1,413 institutions, of which 947 responded. Used as a consistent baseline for the 2025 comparison. [13] • Online source 1 • Online source 2

114 Oman Association for Chartered Public Accountants. "Analytical Study of the Accounting, Finance and Auditing Sector," 2025. Relevant passage: p. 3, licence to host the sector skills unit dated 26 August 2021, code MOL-SSU-04-01. Used to date this unit specifically, without generalising the date to other units. • Online source

115 Al Taammul. "In Two Days: Licensing Begins for Certain Occupations for Omanis and Expatriates", 29 August 2025. Covers the competency test requirement before approval to recruit an expatriate and before an Omani starts work, and restriction of licences to Omanis in Omanised jobs. Read with the Ministry of Labour announcement in OPAL's July 2025 bulletin, p. 8, and OPAL's notice in its December 2025 bulletin, p. 13, to document the announced date for linking work permits to licences in covered occupations, followed by the compliance grace period. These announcements alone do not establish operational results. • Online source • Initial announcement • Compliance grace period notice

116 Oman News Agency, citing Oman Investment Authority. National Development Portfolio achievements since 2021, May 2025. Includes OMR 265.5 million spent on SMEs in 2024, equivalent to 19.8% of supply chain expenditure, and local content equivalent to 32.4% of contract value. • Online source

117 Oman Observer. Seventh Local Content Forum; Oman Investment Authority statement, 24 September 2026. Reports expenditure on SMEs increasing to OMR 279 million in 2025 and their share to approximately 19.9% of supply chain expenditure. • Online source

118 United Nations Department of Economic and Social Affairs. E-Government Knowledgebase: Oman country page, 2024 edition. Rank 41 out of 193, score 0.8576, compared with rank 50 and score 0.7834 in 2022. Primary source for the 2024 ranking in Table 2–1. • Online source

119 Oman Daily. "Vocational and Technical Education: A Strategic Pathway to Develop National Talent with Specialised Practical Skills", 24 April 2026. A feature describing the pathway's third year, expansion into South Al Batinah and specialisations including travel and tourism; no admission counts are provided. • Online source

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