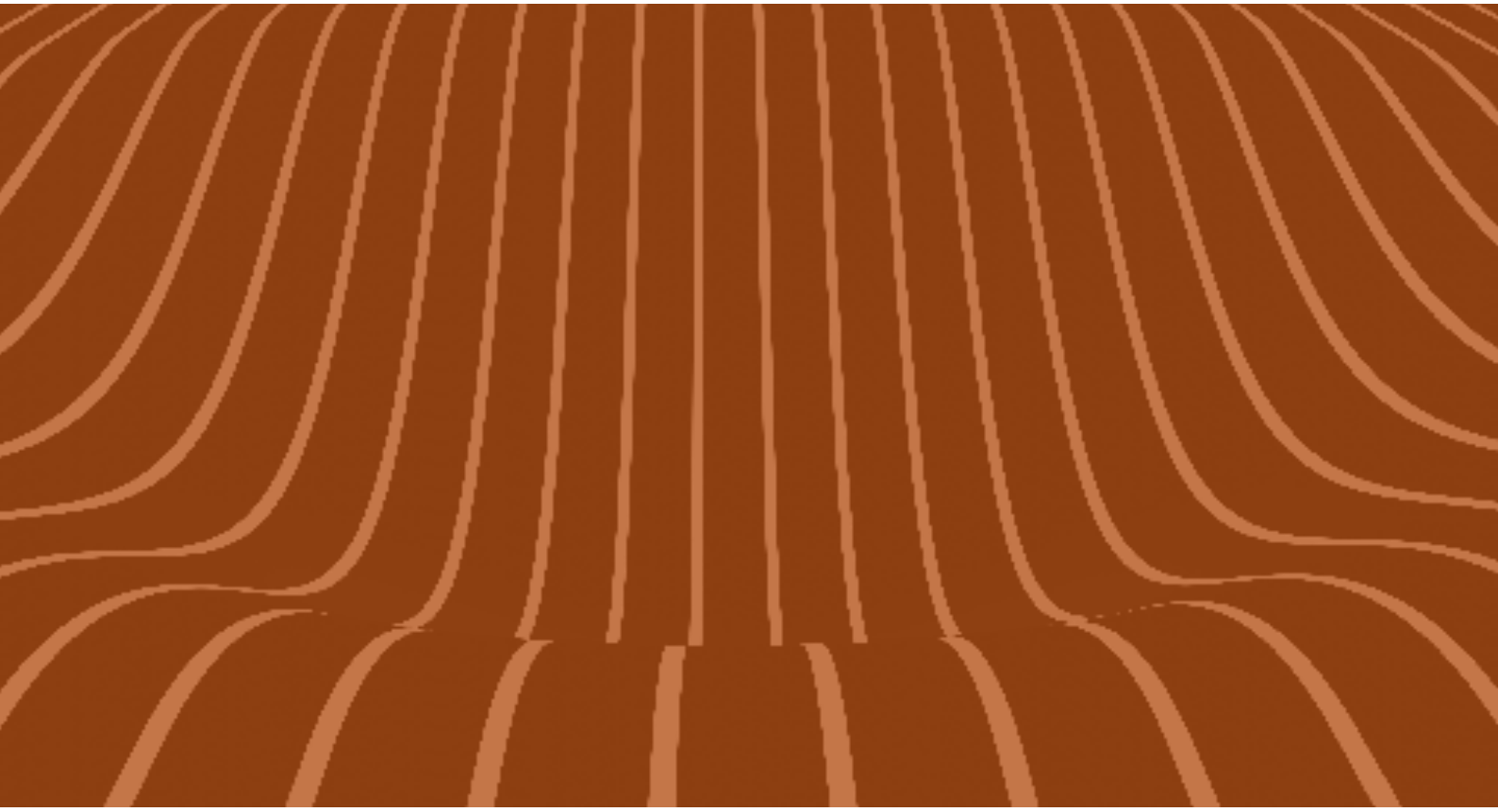
Government of Papua New Guinea

National Digital Transformation Plan

2023-2025



Department of Information and Communications Technology

NATIONAL DIGITAL TRANSFORMATION PLAN 2023-2025

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Version

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National Digital Transformation Plan

2023-2028

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FOREWORD

HON. MINISTER TIMOTHY MASIU

MINISTER FOR INFORMATION AND COMMUNICATIONS TECHNOLOGY

This national digital transformation plan is fundamentally different from its predecessors, deliberately so.

To date, national policy in this field has served two main purposes. First, it has signalled government's broad acceptance of the merits of digital transformation as a vital means for improving service delivery and stimulating economic activity. And second, it has established an overarching framework of high-level legislation to govern the developments that take place.

However, to embark on the long and complex journey towards a digital economy - while minimising the risks and optimising the benefits for equitable and sustainable development - we must first build solid foundations for informed decision making. Above all, we need to generate valid data on the ICT capacities and digital 'readiness' of service delivery agencies, on citizen satisfaction with existing services, and on the development- and cost-effectiveness of different digital transformations.

Our feet must be firmly planted on such ground, on data that are essential to effective and efficient implementation. It is only in this way that government can take measured, concrete steps towards the establishment of a digital economy that benefits society as a whole: the public and private sectors, civil society, and all of our citizens rather than just a privileged few.

This plan sets out a clear, practical, and feasible critical path for the first phase of our progression towards such ends, one that we shall pursue vigorously with the help of our development partners.

For the reasons just given, for at least the next three years, this plan will therefore underpin the vanguard of much that we shall do in this field.

ACRONYMS

APEC	Asia-Pacific Economic Cooperation
DICT	Department of Information and Communications Technology
DTI	Digital Transformation Index
ESCAP	Economic and Social Commission for Asia and the Pacific
GDP	Gross Domestic Product
GovPNG	Government of Papua New Guinea
HR	Human Resources
ICT	Information & Communications Technology
LTE	Long Term Evolution
MSME	Micro, Small, and Medium Enterprises
OECD	Organisation for Economic Cooperation & Development
PNG	Papua New Guinea
PSICTSC	Public Service Information and Communications Technology Steering Committee
PU	Policy Unit
SDG	Sustainable Development Goal
TA	Technical Assistance
TBD	To Be Determined
TOR	Terms of Reference
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WIMAX	Worldwide Interoperability for Microwave Access

CONTENTS

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PREAMBLE

1. For stakeholders who are unaware of the background, this preamble explains how this document came about, and the main purposes that this version of it is designed to serve. It also suggests what expectations they might reasonably have in mind as they read it.

2. The national digital transformation plan set out herein responds to a request from the Department of Information and Communication Technology (DICT) of the Government of Papua New Guinea (GovPNG) for help with finding a path through the dense thicket of policies, legislation, and plans pertaining to digital transformation in PNG that has sprung up over the last few years. Just those documents listed in Annex 1 comprise more than 1,000 pages of complex, inter-related text in what is for PNG – and many other countries in the Global South - a nascent and rapidly changing field. A field that few of DICT's staff have much experience of or knowledge about. Even more voluminous and forbidding is the body of relevant secondary literature: comparative legislation, policies, and plans from other jurisdictions; data collection instruments, guidelines, and frameworks developed by multilateral and bilateral aid agencies; and academic publications and professional reports.

3. We are confident that the sheer amount of such material, and its complexity, would have proved to be just as daunting, and overwhelming, for similar departments in other governments that we have worked with.

4. To its credit, the DICT recognised that, in order to optimise the development benefits of moving towards a systematic digital transformation and minimise the risks, it needed to pause and take stock. Moreover, it could see that concrete progress was only likely to be made if the bases for action were succinct, comprehensible, and feasible, that is, doable with the human and other resources at its disposal. They wanted, and needed, a document that would be read and understood, and could be acted upon, and would not be treated as an end in itself.[1]

5. The Department therefore sought and obtained technical assistance to help it produce a national digital transformation plan that had these qualities, and which could form the basis for discussion with stakeholders.

6. The first stages of the resulting project of technical assistance demonstrated, in addition, that the governance and development context, and political economy of PNG demanded that now was the time for a digital transformation plan that was much more evidence-based, selective, incremental, risk minimising, inclusive, and focused on the public good than its recent predecessors have been.

7. In short, it found that prevailing development conditions, and the state of the policy and legal framework and market development in PNG, call for an approach to digital transformation that is closer to feasible, pragmatic, and precisely targeted piecemeal social engineering than it is to aspirational, utopian – 'pie-in-the-sky' – grand design.[2]

1 In many countries, including PNG, there is a real risk of such documents being regarded as ends in themselves with little or no implementation. This problem is highlighted by Turner (2021), who notes that: 'In PNG there has been a demonstrated capacity to create policy and plan documents in public management and decentralisation but a clear failure to effectively implement them.' From: Turner, M. (2021). *Why has it Proved so Difficult to Develop an Effective State in Papua New Guinea? The Role of Politics*. Paper presented at 'Learning about Papua New Guinea and how it works', Conference honouring Ron May, Australian National University, 16-17 September. This corroborates a view expressed in Blunt (2018): 'Our critical assessment of our own management performance in these respects… is that we tend to put too much emphasis on saying what we are going to do – the many thick and colourful volumes of policies, visions, and plans attest to the extent of our good intentions – and not enough on doing those things on time and to a good standard. In too many instances, the production of the policy or the plan or the vision statement becomes the end rather than a means to more developmental ends.' See: Blunt, P. (2018). *Public Policy and SDG Utilisation in PNG*, Port Moresby: Department of National Planning & Monitoring, Government of Papua New Guinea and UNDP, pp. 41, online source.

2 This is not to say that high-level national digital economy policies of the general type that have been produced to date are not needed, but that they must be complemented by policies, strategies, and plans that enable them – selectively - to be put into effect in the light of empirical data gathered in PNG, as required herein.

8. This plan conforms to these requirements.[3]

9. In reading the document, it is important therefore for stakeholders to keep in mind that the intention has not been – and should not have been – to state explicitly how their respective interests might be catered for. This is not a document that attempts to be all things to all people, nor should it be. The almost complete absence of systematic, comprehensive, recent, and valid data upon which to base rational and impartial decisions about digital transformation in PNG effectively prohibits this.

10. Accordingly, the overriding purpose of this plan is to start to rectify such 'data-deprivation' by operationalising and making as effective as possible as quickly as possible an ICT governing body that is already established in law and, thereby, to provide the bases for taking a small number of well-informed and judicious first steps towards an inclusive digital economy.[4]

11. Done well, the data collection and analysis and other tasks that are assigned to this body under the Plan will provide grounds for the gradual expansion and acceleration of digital transformation in government, and more broadly, that will have clear benefits for a growing number of stakeholders.

INTRODUCTION

12. This National Digital Transformation Plan (the Plan) sets out three courses of action that the GovPNG will pursue over the next three years to optimise progress towards an inclusive digital economy.

13. The responsible authority will be the Public Service ICT Steering Committee (PSICTSC) established under the Digital Government Act (2022), which will put the Plan into effect. That is, it will supervise or carry out the tasks that the Plan requires to be performed, and report on them.

AIM, SCOPE, AND BENEFITS

14. The Plan is designed to enable empirically informed decisions to be made by the GovPNG about the nature, extent, pace, and direction of digital transformation within government. Towards this end, it aims to prepare the ground for carefully targeted and prioritized, development-effective, cost-effective, low risk, piecemeal, and incremental change.

3 The general approach adopted here is endorsed by the OECD (2021) – See Coupienne and Harihareswara (2021) *Overcoming exclusion in digital economies*. In *Development Co-operation Report 2021: Shaping a Just Digital Transformation*, online source. For lower income countries, an 'agile' and 'lean' approach is also advocated by The Rockefeller Foundation (2018), one that enables governments to adopt 'lean' platforms that are less expensive, rapidly deployable, interoperable, modular, and user-centric...that are designed to scale [so that] when the opportunity presents itself, lower-income countries can position themselves for further expansion when the value proposition of the platforms has been proven.' See: *Promoting Digital Transformation in Lower-Income Countries*, online source.

4 In their recent assessment of the digital landscape of countries in the Asia Pacific, UNESCAP (2022) emphasise the serious limitations arising from a lack of data: 'One of the most conspicuous findings from the DTI analysis is that 45 per cent of the countries in the world and 50 per cent of ESCAP member States do not have sufficient data to diagnose their digital transformation status, leaving them excluded from the analysis… The lack of reliable data in half of ESCAP member States poses a significant obstacle to not only assess the current level of digital transformation but establish digital visions and formulate timely and proactive digital policies to maximize the benefits of digital innovations.' See: Seunghwa Jun, Jongsur Park and Jeong Yoon Kim (2022). *Digital Transformation Landscape in Asia and the Pacific: Aggravated Digital Divide and Widening Growth Gap*. United Nations ESCAP, Information and Communications Technology and Disaster Risk Reduction Division, July 2022. Bangkok, online source.

15. The Plan is of narrow or modest scope in that it focuses on a single governing body, the PSICTSC. But the tasks it assigns to this body have wide ramifications - for the whole of government, and beyond to the other domains of governance. This is so because, like government's everywhere, the role of the GovPNG is to 'exercise political, economic and administrative authority to manage [the] nation's affairs.'[5] Government is the guardian of the Constitution and the principal agent of national economic management and sustainable and equitable development, which means that the beneficial effects of the Plan eventually will be felt in civil society and the private sector (see figure 1 below).

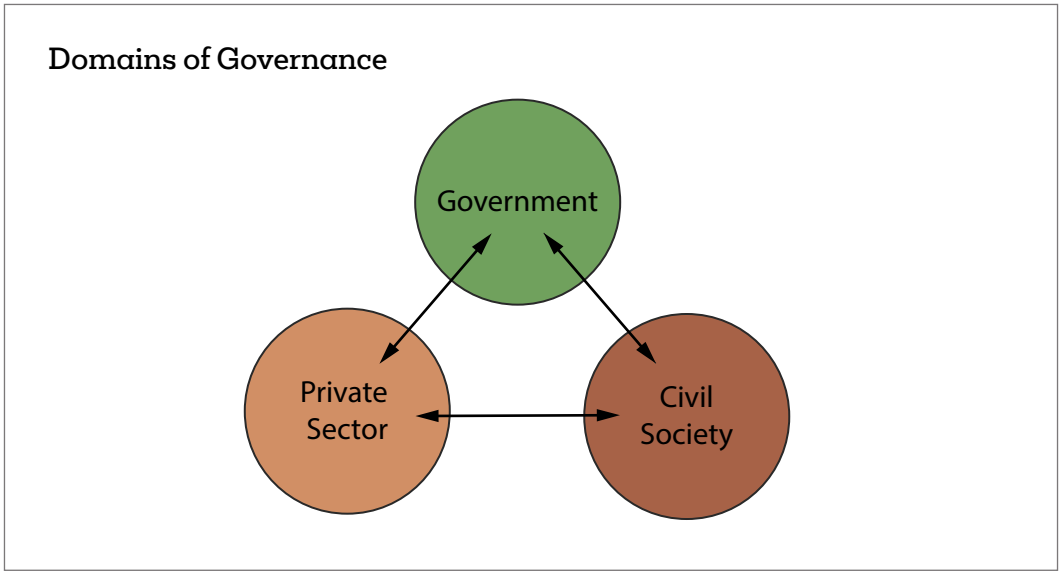

Figure 1: Domains of governance.

ORIENTATION OF THIS PLAN

16. The Plan is guided by and responsive to the Constitution of Papua New Guinea,[6] which, among others, requires that 'Every effort [must] be made to achieve an equitable distribution of incomes and other benefits of development among individuals and throughout the various parts of the country' (Goal 2.3 of the Constitution of Papua New Guinea).[7]

17. The Plan's orientation therefore assumes that:

a. Decisions regarding digital transformation in government that are optimal for equitable and sustainable development can only be made in the light of impartial assessments of the best available empirical evidence (e.g., on development need, on digital readiness, on demand and citizen satisfaction with public services, on digital development-effectiveness and need and who is likely to benefit, and on digital cost-effectiveness).

b. The demands, complexity, and of the PNG development context and political economy, and the high costs of digital transformation, also require decisions to be transparent, highly selective, incremental, and low risk.

5 See: Blunt, P. (with D. Rondinelli) (1997). Reconceptualising Governance. New York: Department of Public Affairs, UNDP, pp. 93 & xi, online source.

6 All references to the Constitution are to 'Papua New Guinea's Constitution of 1975 with Amendments through 2014', online source.

7 'The Constitution and the Organic Laws are the Supreme Law of Papua New Guinea, and, subject to Section 10 [construction of written laws] all acts (whether legislative, executive or judicial) that are inconsistent with them are, to the extent of the inconsistency, invalid and ineffective.'

18. Accordingly, the plan of the GovPNG is to provide as soon as possible for the generation and analysis of recent, valid, and reliable data to inform government decisions that optimise the development benefits of inclusive digital transformation and minimise the risks, particularly those of:

a. Exacerbating deep rural-urban and rich-poor divides and unusually high levels of chronic multidimensional poverty.[8]

b. Failing to address the needs of rural populations, particularly women and children.[9]

c. Paying insufficient attention to the Dutch Disease[10] consequences for the development of non-extractive sector SMEs and the informal sector.

d. Misdirecting resources to poorly conceived and premature or over-ambitious ICT 'black holes'[11] and crowding-out investment on more basic development needs, leading to the corrosion of public and private sector confidence and government credibility; the undermining of domestic political support; and hesitancy, delays, and reductions in donor technical and financial assistance.

19. The Plan is to be achieved by assigning to a single government agency, which already possess legal responsibility and authority for such matters, a number of tasks that will provide a sound empirical basis for decisions regarding the first concrete small steps that will be taken towards the digital transformation. The data that are generated will enable government to make informed decisions about which steps to take and why, when, and how, and where the responsibility and authority for implementation will lie.

COMPATIBILITY WITH EXISTING POLICY, LEGISLATION, AND PLANS

20. The Plan flows from higher order policy and plans, starting with the Constitution and PNG Vision 2050, is consistent with the National ICT Act 2009 and Digital Government Act 2022, and is compatible with extant, relevant policy (See figure 2 below)[12]

8 Note that there is a considerable literature that shows that 'rather than ICT leading to social inclusion, it is the other way around; ICT plays a major role in reinforcing existing social inequalities' (Goedhart et al., 2019 *Just having a computer doesn't make sense: The digital divide from the perspective of mothers with a low socio-economic position*. Media and Society, 21[11-12], online source). Using data generated by the Inclusive Digital Economy Scorecard, OECD (2021) suggests how the risks of digital exclusion can be addressed at different stages of a country's 'market development' - see Coupienne and Harihareswara (2021) *ibid*. Likewise, UNDESA (2021) advocates the development of frameworks for closing the digital divide that have four key dimensions: access, affordability, skills, and awareness. See: Leveraging digital technologies for social inclusion, online source.

9 For example, in East Africa, it has been found that 'rural residence and being female… significantly reduce the chances of having ICT access, by approximately 50 per cent' https://www.un.org/en/chronicle/article/ictpoverty-nexus See also May et al. (2014) *Introduction: The ICT/poverty nexus in Africa*, online source in Odera et al. (2014). *ICT Pathways to Poverty Reduction Empirical evidence from East and Southern Africa*. Practical Action Publishing, online source.

10 'Dutch Disease' refers to an economic condition in which the rapid expansion or development of one economic sector (particularly the extractive sector) results in the decline or stunting of other sectors of the same economy. It is often accompanied by an appreciation of the domestic currency. Dutch Disease is paradoxical in that good news for one sector of the economy often means bad news for the economy as a whole.

11 It has been found that 'the information deficiencies concerning the impact of ICT on poverty reduction have raised concerns among policymakers who are being repeatedly urged to invest a substantial part of the national budget in ICT infrastructure on the basis of an incomplete evidence base.', online source.

12 Such as: National Broadband Policy 2013, PNG National Security Policy 2013, Digital Transformation Policy 2020, Draft Cloud Policy 2021, Draft Universal Access Policy 2022, and National Cyber Security Policy 2021.

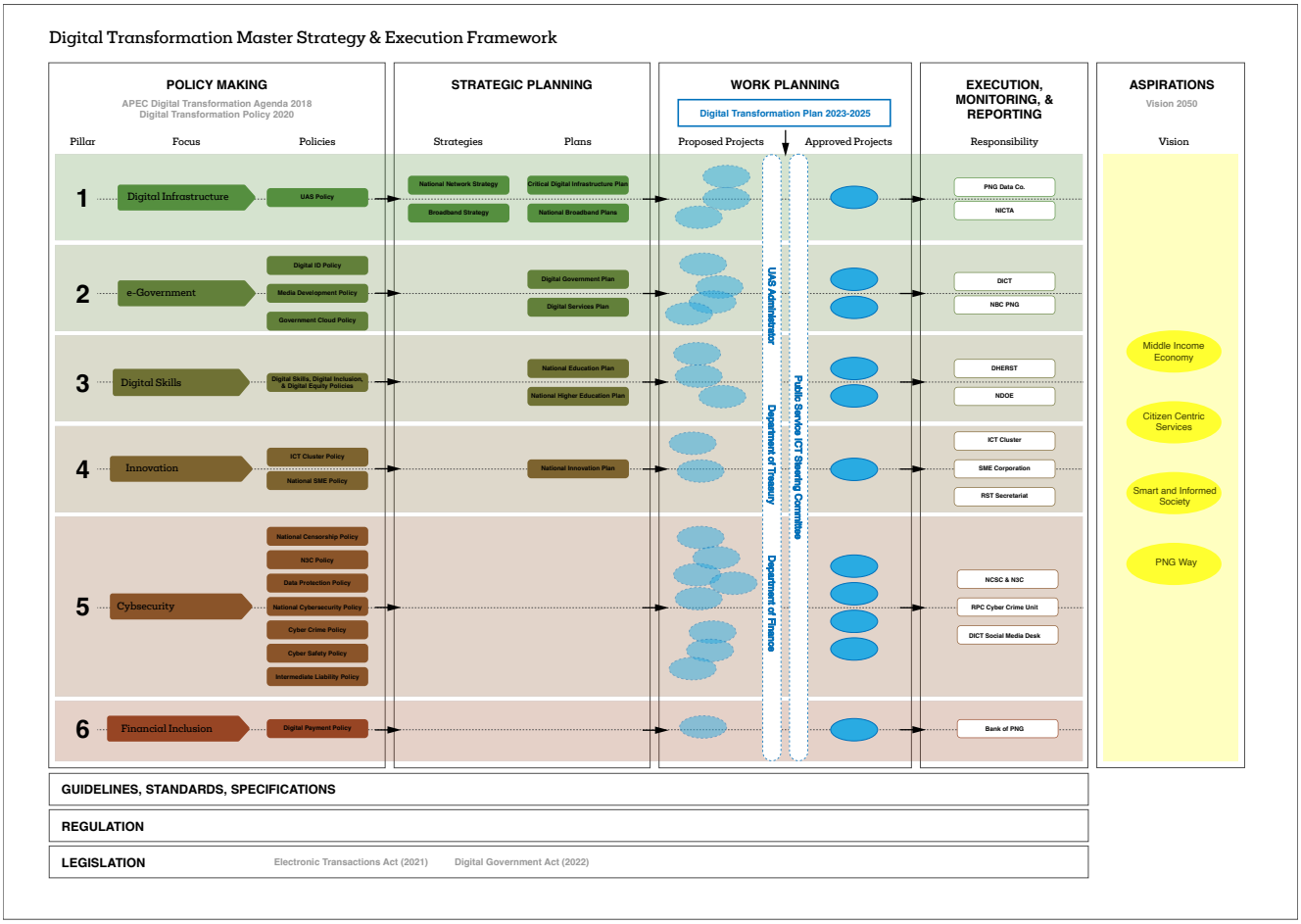

Figure 2: The context for this Plan.

21. However, as the Plan is designed to provide for the production and analysis of the necessary evidence foundations of decisions regarding inclusive digital transformation in government, it should be viewed as taking temporal precedence over existing policies, strategies, and plans that involve DICT and any actions that may be endorsed by those policies and plans.[13] In short, in the medium term (3 years from the date of its approval), the Plan will define and govern the leading edge or vanguard of developments in this field.

COURSES OF ACTION AND TASKS

22. In accordance with its responsibilities under the Digital Government Act 2022, as soon as practicable, the Department of Information and Communications Technology (DICT) of the GovPNG will (where necessary, with technical assistance or by contracting out) embark on the first of three phases of activity, which are delineated below in terms of three courses of action and associated tasks.

13 Relevant plans include the ICT Road Map 2018, and the Digital Government Plan 2023-2027.

COURSE OF ACTION 1: OPERATIONALISE PSICTSC AND SECRETARIAT

23. Under this course of action, the DCIT will:[14]

    a. Operationalise the PSICTSC.

    b. Establish a high quality, medium-term (3 years) technical support facility or secretariat (the Secretariat) for the PSICTSC that contains, or has institutionalised easy access to, high level capabilities in digital transformation, development management, qualitative and quantitative data collection and analysis, and organisational development and change.

    c. Draft detailed terms of reference (TOR) for the Secretariat; job descriptions and person specifications for its staff; and a recruitment and selection strategy.

    d. Include in the TOR for the Secretariat the requirement for it to produce:

        i. A detailed operations manual for the PSICTSC.

        ii. Annual plans that build on the tasks listed in the Plan.

        iii. Quarterly reports that keep stakeholders (including development agencies) informed of its activities and invite constructively critical commentary.

        iv. An action learning plan for the transfer and institutionalisation of knowledge and skills from Secretariat advisers to DICT staff and the phasing-out of external assistance.

        v. From time-to-time succinct think pieces or briefing notes that address for PNG the issues surrounding critical enabling actions for digital transformation - such as those listed in Annex B - that are in line with PNG's market development, responsive to PNG's development circumstances and that consider comparative experience.

        vi. Case studies of successful and unsuccessful digital transformation in PNG that highlight positive and negative lessons learned.

COURSE OF ACTION 2: COMMENCE DATA COLLECTION AND ANALYSIS

24. As soon as it has been operationalized and its secretariat is in place, the PSICTSC will:[15]

    a. Conduct a comprehensive (whole of government), independent digital readiness survey, collate and analyse the results, and produce a report that summarises them and their implications for the extent, direction, and scheduling of digital transformation in government.[16]

14 A critical path for these tasks is in Annex C.

15 A critical path for these tasks is in Annex Annex D.

16 An instrument that has been used to good effect in other settings should be selected such as the one developed by the World Bank. This assesses digital readiness in terms of leadership and governance; user-centred design; public administration and change management; capabilities, cultures, and skills; technology infrastructure; data infrastructure governance and strategies; cybersecurity privacy and resilience; legislation and regulation; and the digital ecosystem. See World Bank (2020, April). *Digital Government Readiness Assessment Toolkit* V31, online source.

b. Commission an independent survey of citizen satisfaction with public service delivery whose results will provide a baseline for gauging the effects of digital transformations and a framework for targeting them; collate and analyse the results, and produce a report that summarises them and their implications for the extent, direction, and scheduling of digital transformation in government and in other domains of governance.

c. Disseminate and explain to stakeholders in all domains of governance (government, the private sector, and civil society) the findings and implications of the surveys.

d. Update the surveys at regular intervals.

e. Become a member of and contribute to a world digital competitive ranking system.[17]

f. Bearing in mind the risks identified in paragraph 18 above, assess digital demand in rural populations and among disadvantaged groups.[18]

g. Assess the development-effectiveness and cost-benefits of digital transformation by service and/or agency.

COURSE OF ACTION 3: COMMENCE DIGITAL TRANSFORMATION PROJECT APPRAISALS & INSTITUTION BUILDING OF DICT

25. In the light of the digital readiness survey, citizen satisfaction survey, demand assessments, cost-benefit analyses, and the orientation of this plan outlined above, and with a view to establishing a firm foundation for inclusive digital transformation advances in all domains of governance, the PSICTSC will then: [19]

a. Review and revise existing digital transformation policy, legislation, and plans.

b. Develop and disseminate a *pro forma* for the submission of project proposals that requires applicants to supply evidence regarding the critical issues highlighted herein, such as digital readiness, citizen satisfaction, social and economic effects and inclusion, development-effectiveness, cost-effectiveness, and so on.

c. Invite, and make decisions regarding, digital transformation project proposals from other parts of government.

d. Identify and propose a few digital transformation 'safe bets'.

e. Investigate how digital transformation could help to stem the substantial losses to transfer pricing and other forms of tax evasion, particularly in the extractives sector.

17 Such as: IMD (2021). IMD *World Digital Competitiveness Ranking 2021*, online source.

18 Of particular relevance to PNG is the notion of 'digital poverty', which is defined by May (2012) as incorporating 'a demand dimension (the ICT service cannot be afforded), a capability dimension (the skills to use the service are unavailable), and a supply dimension (the infrastructure to deliver the service is not in place).' See: May, J.D. (2012). Digital and other poverties. Information Technologies and International Development, 8(2), 33-50, online source. In terms of access (poverty), at present, it is estimated that almost half of PNG's population (48.7%) use mobile telephony, of which 89.0% have 2G coverage, 64.4% have 3G coverage, and 50.0% have access to LTE/WiMAX (sometimes referred to as 3.5-4G) connections, online source. And there are approximately 1.66 million Internet connections in use in the country, which serve about 18% of the population, online source. In 2019, it was reported that in the Pacific Island Countries (PIC) the highpoint of mobile connections as a percentage of the population was '84% in Fiji to a low of just 11% in the Marshall Islands. Papua New Guinea is by some way the most populous country in the region; with a subscriber penetration rate of 30% [third lowest in the PICs], it is home to the majority of the unconnected population across the region.', online source.

19 A critical path for these tasks is in Annex E.

f. With a short list of key organisational representatives of all domains of governance, establish a forum for the discussion of the digital transformation data, case studies, and briefing notes that it generates. The forum should give voice to a representative cross-section of society, particularly women and children, the urban and rural poor, rural populations in general, and other disadvantaged or vulnerable groups.

g. Devise, pilot, and disseminate a sector-based human resource planning framework for ICT workers in government.

h. Produce or cause to have produced targeted sector human resource plans for ICT workers and highlight the implications for capacity and institution building and the direction, extent, and pace of digital transformation.

i. In collaboration with local training and education organisations, carry out periodic tracer studies of locally produced ICT graduates and highlight the implications for capacity and institution building and the direction, extent, and pace of digital transformation.

j. Critically examine, 'weed-out', and prioritise enabling actions for digital transformation from the list in Annex B and develop project proposals for their implementation.[20]

k. Conduct a training needs analysis for DICT staff and an organisational design audit of DICT.

l. Rationalise the conceptual and executive loads placed on the DICT.

m. Prioritise and schedule according to stage of market development, need, and (DICT) assessed absorptive capacity the establishment and operationalisation of the governance bodies falling under the jurisdiction of DICT, as set out in the Digital Government Act (2022); and consider, and make recommendations regarding, the implications for the role and functions of key organisations in the sector.

n. Design and implement a training, institution building, and change management plan for DICT.

o. Provide for continuing training of DICT staff and organisational design and development and culture building for the DICT.

26. No later than four years after the PSICTSC has become operational, the DICT will commission an independent evaluation of the role and work of the Secretariat and its performance and the likelihood of successful transfer and institutionalization of its capabilities within the 3-year lifespan of the Secretariat stipulated in paragraph 23 (b). If deemed necessary, the evaluation will make recommendations for the extension of the Secretariat's lifespan beyond three years and its redesign.

20 Note that as soon as relevant data have been generated by the tasks assigned to the PSICTSC, it will be possible to make judgments about the 'TBD' time frames of the enabling actions listed in Annex B.

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Annexes

ANNEX A: DOCUMENTS PERTAINING TO DIGITAL TRANSFORMATION

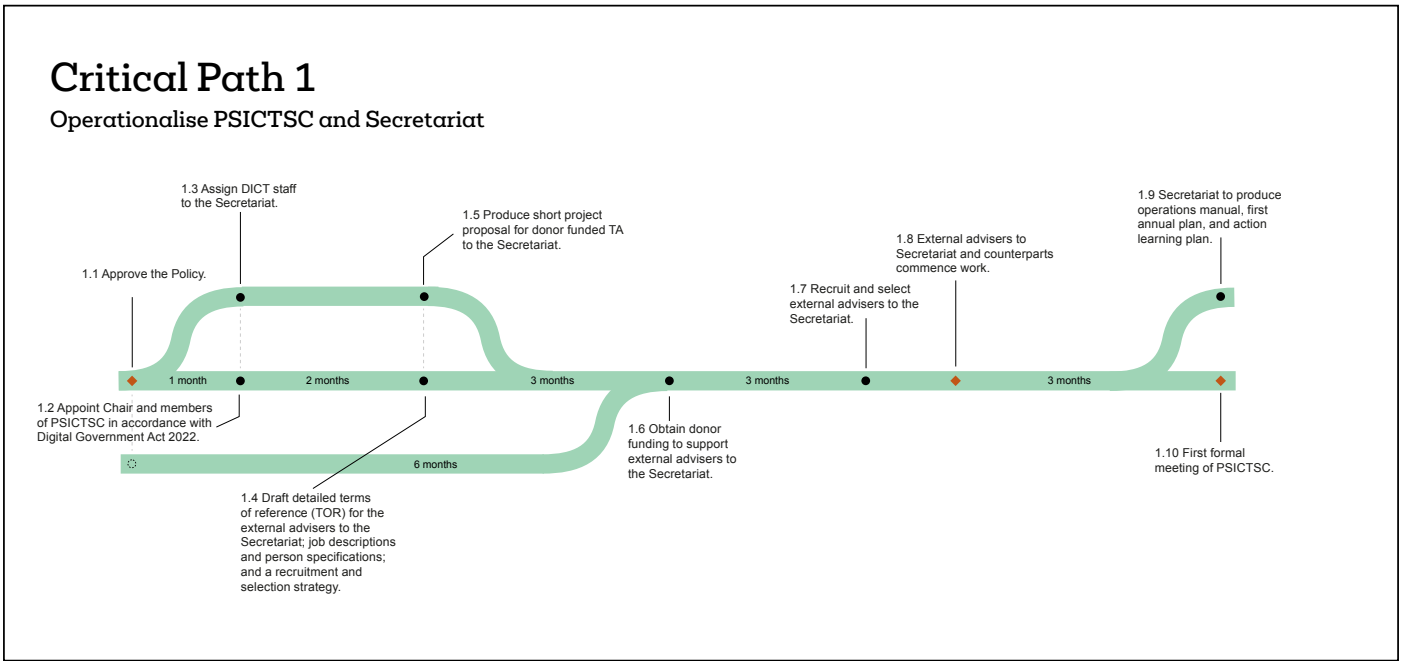
#	INSTRUMENT	LENGTH (PAGES)	STATUS
1	The Constitution of PNG	193	Approved, in effect
2	PNG Vision 2050	79	Approved, in effect
3	PNG Development Strategic Plan 2010-2030	167	Approved, in effect
4	National ICT Act 2009	225	Approved, in effect
5	National Broadband Policy 2013	23	Approved, in effect
6	PNG National Security Policy 2013	75	Approved, in effect
7	ICT Road Map 2018	44	Approved, in effect
8	PNG Medium Term Revenue Strategy 2018-2022	51	Approved, in effect
9	PNG NSDS Volumes 1 and 2 2018-2027	113	Approved, in effect
10	Digital Transformation Policy 2020	52	Approved, in effect
11	Cloud Policy 2021	28	Draft
12	Universal Access Policy 2022	21	Draft
13	National Cyber Security Policy 2021	35	Approved, in effect
14	Digital Government Act 2022	34	Approved, in effect
15	Digital Government Plan 2023-2027	47	Approved, in effect
16	Right to Information Policy (2020-2030)	23	Approved, in effect
17	National Public Service Gender Equity and Social Inclusion Policy	56	Approved, in effect
18	APEC Internet and Digital Economy Roadmap 2017	8	Approved, in effect
19	Chair's Era Kone Statement 2018	5	In effect
20	SDG Report 2022	68	Approved, in effect

ANNEX B: ENABLING ACTIONS FOR DIGITAL TRANSFORMATION

#	ACTION	TYPE	COMPLEXITY	SCOPE	TIME FRAME
1	Review current domestic telecommunications sector structure and compare with other markets internationally and make proposals for reformation.	Data/Legal	High	Systemic	Now
2	Design and develop a data protection framework for citizen data held by public and private institutions.	Legal	Low	Systemic	Now
3	Measure citizen satisfaction with public service delivery as a baseline for gauging the effects of digital transformations.	Data	Low	Systemic	Now
4	Develop a digital infrastructure sharing policy: facilities, conduits, cables, radios, spectrum.	Competition/Legal	High	Systemic	TBD
5	Prepare and disseminate materials, using existing networks, that support the uptake of digital technologies, aimed at marginalised groups, youth, and women.	Capabilities	Low	Targeted	Now
6	Apply international standards for infrastructure development and sharing.	Infrastructure/Legal	High	Systemic	Now
7	Establish or support the private sector to establish a digital identity scheme based on PKI and open standards.	Infrastructure/Legal	High	Systemic	TBD
8	Implement interoperability agreements with external stakeholders for regional trust and interoperability vis-a-vis APEC/OECD.	Legal	Medium	Systemic	TBD
9	Encourage the use of off-grid energy generation and storage solutions to support digital technology use and operation.	Infrastructure/Legal	Medium	Targeted	TBD
10	Publicise digital transformation success stories from PNG. Refer to success stories from abroad.	Capabilities/Data	Low	Targeted	Next
11	Audit the international data sets and indices from which PNG is absent and work to participate in those indices on time and transparently.	Data	Low	Systemic	Now
12	Participate in the open government data platform internationally.	Data	Low	Systemic	Next
13	Assess the effects of temporary removal of customs and import duties on ICT equipment for MSME.	Competition/Legal	Medium	Targeted	Next
14	Develop and publicise a foreign direct investment procedure that is digitally enabled.	Legal/Procedural	High	Systemic	TBD
15	Develop free and open-source materials for establishing a digital storefront.	Capabilities/Legal	Low	Targeted	TBD
16	Develop a framework for employment bonding for those who undertake subsidised ICT education abroad.	Capabilities/Legal	Low	Targeted	Next
17	Simplify and make more efficient licensing for digital infrastructure and reduce the cost.	Legal/Procedural	Medium	Systemic	TBD
18	Assess possible savings from a shared ICT services model for state-owned enterprises.	Infrastructure	Medium	Targeted	TBD
19	Create government classification of personally identifiable information (PII).	Competition/Data	Medium	Systemic	TBD
20	Establish an independently administered industry fund for universal access, in advance of universal service.	Data/Legal	High	Systemic	TBD
21	Make available to the public reports on the applications and awards made from the universal access fund.	Data/Legal	Low	Targeted	TBD
22	Provide market access for technology exchanges between domestic and foreign private sector entities.	Procedural	Low	Targeted	TBD
23	Modernise and keep up-to-date computer science, information technology, and computer engineering tertiary curricula.	Legal/Competition	High	Systemic	Now
24	Assess the merit of a new class of work visa that will entice digital experts to PNG.	Capabilities	Medium	Systemic	TBD
25	Assess the merits of special economic zones for ICT service provision.	Capabilities	Medium	Systemic	TBD

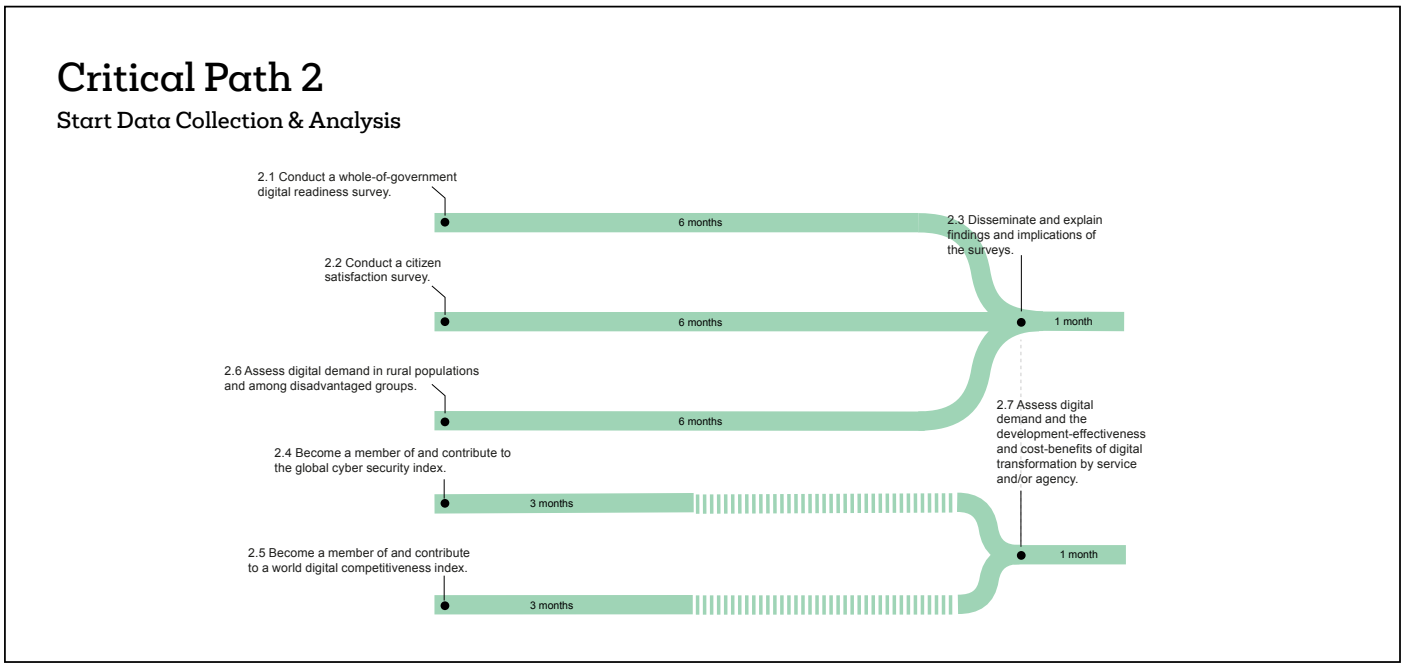
ANNEX C: CRITICAL PATH 1 - OPERATIONALISE PSICTSC AND SECRETARIAT

#	TASK	RESPONSIBILITY	NOTIONAL TIME FRAME	COMMENT
1.1	Approve the Plan.	DICT	One month from completion of TA project	
1.2	Appoint Chair and members of PSICTSC in accordance with Digital Government Act 2022.	DICT	One month after the approval of the Policy	
1.3	Assign DICT staff to the Secretariat.	DICT	One month after the approval of the Policy	
1.4	Draft detailed TOR for the external advisers to the Secretariat; job descriptions and person specifications; and a recruitment and selection strategy.	Contract out	Three months after approval of the Policy	It is critical that this work is done to a high standard and that the quality of external advisers is first rate
1.5	Produce short project proposal for donor funded TA to the Secretariat.	See, for example, Annex F	Three months after approval of the Policy	
1.6	Obtain donor funding to support external advisers to the Secretariat.	DICT	Six months after approval of the Policy	
1.7	Recruit and select external advisers to the Secretariat.	Contract out	Three months after donor funding secured	
1.8	External advisers to Secretariat and counterparts commence work.	DICT/contractor	Four months after donor funding secured	
1.9	Secretariat to produce operations manual, first annual plan, and action learning plan.	Secretariat	No later than three months after starting work	
1.10	First formal meeting of PSICTSC.	Chair PSICTSC/Secretariat	One week after production of operations manual, first annual plan, and action learning plan	



ANNEX D: CRITICAL PATH 2 - START DATA COLLECTION & ANALYSIS

#	TASK	RESPONSIBILITY	NOTIONAL TIME FRAME	COMMENT
2.1	Conduct a whole-of-government digital readiness survey.	Contract out - see Annex G	Six months	Use established instrument that has been employed in other countries
2.2	Conduct a citizen satisfaction survey.	Contract out - see Annex G	Six months	In parallel with digital readiness survey
2.3	Disseminate and explain findings and implications of the surveys.	Secretariat	Within one month of survey completion	
2.4	Become a member of and contribute to the global cyber security index.	Secretariat	One month after first meeting of PSICTSC	
2.5	Become a member of and contribute to a world digital competitiveness index.	Secretariat	One month after first meeting of PSICTSC	
2.6	Bearing in mind the risks identified in paragraph 18 above, assess digital demand in rural populations and among disadvantaged groups	Contract out - see, for example, Annex H	Six months	In parallel with surveys
2.7	Assess digital demand and the development-effectiveness and cost-benefits of digital transformation by service and/or agency.	Secretariat or contract out	Six months	Commence after completion of surveys

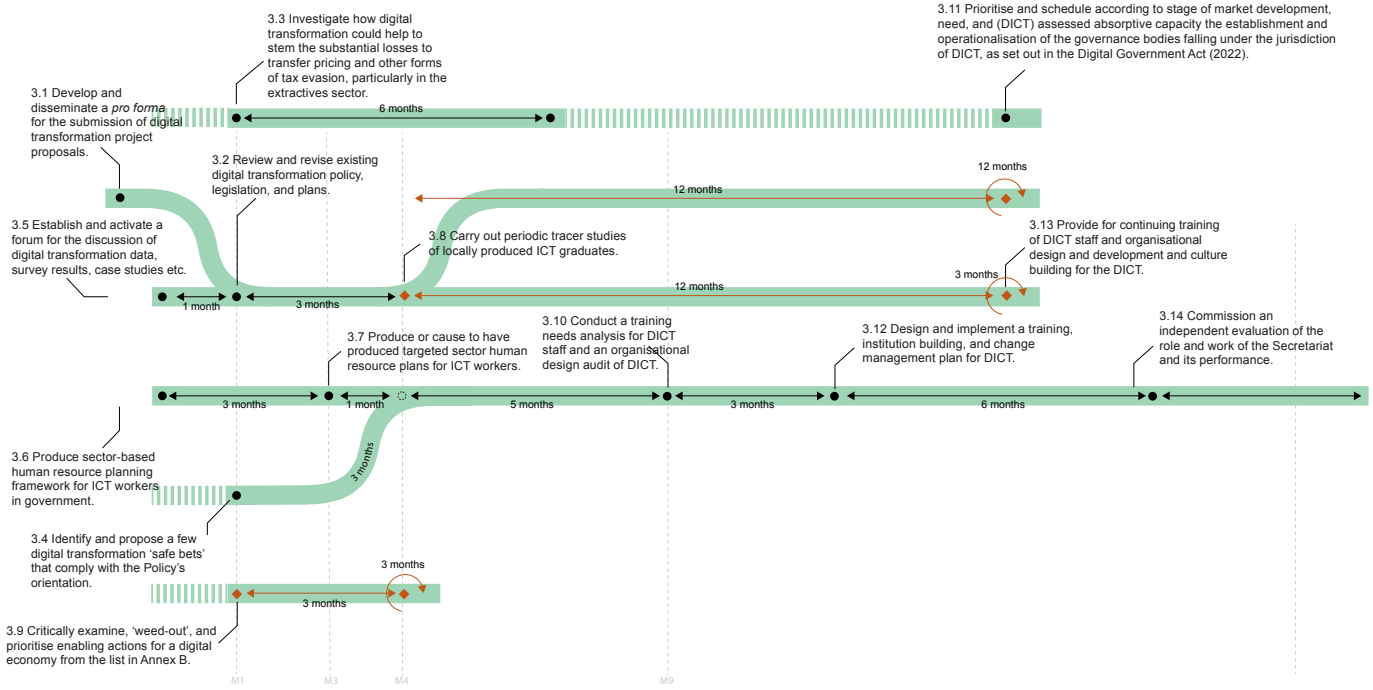


ANNEX E: CRITICAL PATH 3 - START DIGITAL TRANSFORMATION PROJECT APPRAISALS

#	TASK	RESPONSIBILITY	NOTIONAL TIME FRAME	COMMENT
3.1	Develop and disseminate a *pro forma* for the submission of digital transformation project proposals.	Secretariat		In parallel with dissemination of survey results
3.2	Review and revise existing digital transformation policy, legislation, and plans.	Contract out	Three months	Commence after completion of surveys and dissemination of results
3.3	Investigate how digital transformation could help to stem the substantial losses to transfer pricing and other forms of tax evasion, particularly in the extractives sector.	Contract out - see Annex I	Four to six months	Commence after completion of surveys and dissemination of results
3.4	Identify and propose a few digital transformation 'safe bets' that comply with the Policy's orientation.	Secretariat	Three months	After dissemination and discussion of survey results
3.5	Establish and activate a forum for the discussion of digital transformation data, survey results, case studies etc.	Secretariat		In parallel with dissemination of survey results
3.6	Produce sector-based human resource planning framework for ICT workers in government.	Contract out	Three months	In parallel with dissemination of survey results
3.7	Produce or cause to have produced targeted sector human resource plans for ICT workers.	Contract out	Six months	Following production of HR planning framework for ICT workers
3.8	Carry out periodic tracer studies of locally produced ICT graduates.	Contract out	Six months – first survey	In parallel with HR planning
3.9	Critically examine, 'weed-out', and prioritise enabling actions for digital transformation from the list in Annex B.	Secretariat	Ongoing	Following dissemination of survey results
3.10	Conduct a training needs analysis for DICT staff and an organisational design audit of DICT.	Contract out	Three months	Following HR planning
3.11	Prioritise and schedule according to stage of market development, need, and (DICT) assessed absorptive capacity the establishment and operationalisation of the governance bodies falling under the jurisdiction of DICT, as set out in the Digital Government Act (2022).	Secretariat	Ongoing	Following HR planning and DICT training needs analysis and organisational design audit
3.12	Design and implement a training, institution building, and change management plan for DICT.	Contract out	Six months	Following HR planning and DICT training needs analysis and organisational design audit
3.13	Provide for continuing training of DICT staff and organisational design and development and culture building for the DICT.	Contract out		Include in previous task
3.14	Commission an independent evaluation of the role and work of the Secretariat and its performance.	Contract out	Four months	In year 4 of Secretariat TA project

Critical Path 3

Start Digital Transformation Project Appraisals



ANNEX F: BRIEFING NOTE 3

PROJECT PROPOSAL FOR TECHNICAL ASSISTANCE TO THE SECRETARIAT OF THE PSICTSC & FOLLOW-UP

The recently approved National Digital Transformation Plan (the Plan) recognizes that decisions regarding digital transformation in government that are optimal for equitable and sustainable development can only be made in the light of impartial assessments of the best available empirical evidence (e.g., on development need, on digital readiness, on demand and citizen satisfaction with public services, on digital development-effectiveness and need and who is likely to benefit, and on digital cost-effectiveness).

The Plan also acknowledges that the demands, complexity, and vicissitudes of the PNG development context and political economy, and the high costs of digital transformation, require decisions to be transparent, highly selective, incremental, and low risk.

Accordingly, the plan of the GovPNG is to provide as soon as possible for the generation and analysis of recent, valid, and reliable data to inform government decisions regarding inclusive digital transformation.

To achieve these objectives, the Plan requires that the PSICTSC (see Digital Government Act 2022) and a secretariat to support it be operationalized as soon as possible.

The Plan proposes that the secretariat comprise staff of the Policy Unit (PU) of DICT and a small team of external advisers. The external advisers should either possess or have *'institutionalised easy access to, high level capabilities in digital transformation, strategic management, qualitative and quantitative data collection and analysis, and organisational development and change.'*

The Plan assigns to the PSICTSC and its secretariat a large number of complex tasks that are categorised under three courses of action. The Secretariat is responsible for carrying out or supervising these tasks and the associated data collection and analysis, reporting, disseminating the findings, and so on.

The Plan notes that *'it is critical that this work [of the Secretariat] is done to a high standard and that the quality of external advisers is first rate.'*

This briefing note is designed to help the DICT obtain donor support for two, interdependent activities: first, for a long-term project of technical assistance to the Secretariat of the PSICTSC. The principal features of the project would include:

- **DURATION:** 3 years.
- **TEAM COMPOSITION:** 3 full-time senior advisers.
- **TEAM EXPERTISE:** digital transformation, strategic management, qualitative and quantitative data collection and analysis, and organisational development and change.
- **TEAM LOCATION:** at least 2 advisers *in situ* DICT, but preferably 3. If 2 *in situ*, 1 remote.

Second, this briefing note can be used to solicit donor support for a short-term consultancy that would be carried out once donor commitment had been secured to support the project outlined above. The consultancy would:

- **OUTPUTS:** Produce (in consultation with the PU) draft detailed terms of reference for the external advisers to the Secretariat; job descriptions and person specifications for those advisers; and a recruitment and selection strategy.
- **PROCESS MANAGEMENT:** Put the recruitment and selection strategy into effect and produce rank-ordered short lists of candidates for each of the three positions for consideration by the PSICTSC.
- **DURATION:** Comprise 60 person days of full-time (remote) work spread over about three months.

ANNEX G: BRIEFING NOTE 4

PROJECT PROPOSAL TO ASSESS DIGITAL READINESS AND CITIZEN SATISFACTION

The recently approved National Digital Transformation Plan (the Plan) recognizes that decisions regarding digital transformation in government that are optimal for equitable and sustainable can only be made in the light of impartial assessments of the best available empirical evidence (e.g., on digital readiness, on demand and citizen satisfaction with public services, on digital development-effectiveness and need and who is likely to benefit, and on digital cost-effectiveness).

The Plan also acknowledges that the demands, complexity, and vicissitudes of the PNG development context and political economy, and the high costs of digital transformation, require decisions to be transparent, highly selective, incremental, and low risk.

Accordingly, the plan of the GovPNG is to provide as soon as possible for the generation and analysis of recent, valid, and reliable data to inform government decisions regarding inclusive digital transformation.

Important foundations of such data collection and analysis will include:

- A comprehensive (whole of government), independent digital readiness survey.
- An independent survey that measures citizen satisfaction with public service delivery as a baseline for gauging the effects of digital transformations.

The surveys' results will be collated, analysed, and presented in separate reports that tease out the implications of the findings for the extent, direction, and scheduling of digital transformation in government.

To protect against conflicts of interest, the Plan proposes that the surveys be 'independent'.

This briefing note is designed to help the DICT obtain donor support for the conduct of these surveys, which should commence as soon as possible after the operationalisation of the PSICTSC and its secretariat and be conducted under their supervision.

The surveys can be conducted in parallel by the firms(s) employed to do the work.

For both surveys, data collection instruments that have been used to good effect in other settings should be selected, such as the one developed by the World Bank for digital readiness.

Experience in conducting such surveys in the Global South in countries with similar development contexts to those of PNG suggests that up to six months should be allowed for the conduct of each survey.

The main features of the consultancies will be:

- **OUTPUTS:** For each survey activity, an inception report (no later than 20 days from commencement) that sets out methods of data collection and analysis, sampling, and a questionnaire and/or structured interview guide; and a final report that addresses the matters outlined above.
- **DURATION:** Up to 6 months for each survey, conducted in parallel.

ANNEX H: BRIEFING NOTE 5

PROJECT PROPOSAL FOR CATERING FOR THE NEEDS OF RURAL POPULATIONS IN DIGITAL TRANSFORMATION

Among others, the Constitution of Papua New Guinea (PNG), requires that *'Every effort [must] be made to achieve an equitable distribution of incomes and other benefits of development among individuals and throughout the various parts of the country'* (Goal 2.3 of the Constitution of Papua New Guinea).

The vast majority (about 85%) of PNG citizens live in rural areas and a high proportion of them live in conditions of multidimensional poverty. For example, approximately 80% of rural households do not have access to electricity or sanitation, and 60% are unable to obtain safe drinking water.

At present, it is estimated that almost half of PNG's population (48.7%) use mobile telephony, of which 89.0% have 2G coverage, 64.4% have 3G coverage, and 50.0% have access to LTE/WIMAX (sometimes referred to as 3.5-4G) connections.[1] And there are approximately 1.66 million Internet connections in use in the country, which serve about 18% of the population.[2]

Digital transformation risks associated with these development circumstances include:

- Exacerbation of deep rural-urban and rich-poor divides and already high levels of multidimensional poverty.
- Failure to address the needs of rural populations, particularly women and children.

This briefing note is designed to help the DICT obtain support for a donor funded consultancy that will contribute to the work of the PSICTSC and its secretariat by:

- Proposing how rural populations could be given 'voice' in the national digital transformation process.
- Identifying a small number of realistic and feasible digital transformation options that would benefit rural populations and explaining why these options are worthy of consideration and how they might be pursued.
- Explaining what some of the main impediments would be to implementing the reforms identified and how they could be overcome.
- Teasing out the implications of the above for the extent, pace, and direction of digital transformation in PNG.

The main features of the consultancy will be:

- **OUTPUTS:** an inception report (no later than 20 days from commencement) that sets out sampling, and methods of data collection and analysis, including, for example, structured interview and focus group guides; and a final report that addresses the matters outlined above.
- **DURATION:** about 120 person days full-time (mostly remote) spread over four to six months.

1 Online source.

2 Online source.

ANNEX I: BRIEFING NOTE 6

PROJECT PROPOSAL TO EXAMINE COMBATING TAX EVASION[3] WITH DIGITAL TRANSFORMATION

INTRODUCTION

The economy of PNG is dominated by two sectors: the *agricultural, forestry, and fishing sector*, which employs the majority of the labour force (most, informally); and the *minerals and energy extraction sector* which accounts for the majority of export earnings and Gross Domestic Product (GDP) (World Bank, 2017).[4]

Tax evasion is a major problem in the extractives sector, a problem that is starkly exemplified by the logging or timber industry in PNG. PNG is now among the world's largest exporters of tropical wood. In 2014, PNG exported 3.8 million cubic meters of unprocessed tropical wood, mainly to China.

In addition, there is considerable scope to increase government revenues by changing policy on tax expenditures or tax incentives. Such taxation policy is too lenient according to the World Bank (2017), which sees the potential for significant revenue increases arising from: 'the mineral and petroleum sector by discontinuing the practice of providing significant tax concessions to companies operating in this sector' and that this 'will improve both the fiscal balance and the foreign exchange position in PNG.'

However, perhaps the most serious and neglected taxation problem is transfer pricing, as demonstrated below.

TRANSFER PRICING[5]

In a report released early 2016,[6] the Oakland Institute exposed massive tax evasion and financial misreporting by foreign logging companies in PNG, leading to the non-payment of hundreds of millions of dollars in taxes.

According to Mousseau (2016):

> *'Transfer pricing may also come from an overvaluation of operational expenses by the logging companies [which use] their own companies and subsidiaries in their logging operations, including holding companies generally located in tax havens such as the British Virgin Islands. Companies… are able to charge each other an artificially high price for goods, equipment and services, thereby increasing the sister company's operational expenses. If these charges are high enough, the company's expenses end up greater than its revenue, thus allowing it to declare an operational loss for the year. By declaring losses every year based on inflated operational costs, it is possible for logging firms to evade corporate income tax when in fact the group as whole is turning a profit.'*[7]

These findings should not have come as a surprise as more than a decade earlier a review of five studies of the PNG logging industry conducted by the World Bank between 2000 and 2005 and commissioned by the Government of PNG arrived at very similar conclusions (from Forest Trends, 2006):

> *'However, because of the inexplicable price gap (that warrants further investigation) that is evident and substantial financial incentives for under-reporting log values, no financial study has been able to exclude the continuing spectre of transfer pricing' (p. 3); and*
>
> *'Transfer pricing could not be confirmed but there were unexplained and substantial discrepancies in declared log prices between PNG and its main markets in China, Japan and Korea that warrant further investigation' (p. 59).*

3 Such as through the use of transfer pricing.

4 World Bank (2017), online source.

5 Transfer pricing is a means of tax evasion that entails selling at well below market prices goods produced in one country to a subsidiary of the producer/seller that is located in a tax haven, where the products are sold-on at true market value and/or purchasing services or other means of production at inflated prices from subsidiaries. For a graphic example, see: Guldbrandsen C, Veileborg H. & Fraser, N. (2013). *Stealing Africa - Why Poverty?* online source; see also José G. Vargas-Hernández (2014). *Income Distribution in Multinational Firms through Transfer Pricing*. Journal of Finance and Economics, 2014, 2(3), 60-66.

6 This same company owned the main English language national daily newspaper in PNG - The National - and clearly exercised strict editorial control on anything that could be regarded as adverse coverage of its logging activities.

7 See: Mousseau, F. (2016). *Putting a halt to the great timber heist in Papua New Guinea*. Lowy Institute: The Interpreter: online source.

The same study recommended that government should:

> *"Investigate allegations of illegal accounting practices; (and) support ongoing comprehensive investigation into the unresolved issue of transfer pricing, including those which may have both international and PNG based support' (p. 9).*

It seems unlikely that much has changed in the intervening years.

This briefing note is designed to help the DICT obtain support for a donor funded consultancy that will contribute to the work of the PSICTSC and its secretariat by investigating how digital transformation could help to stem the substantial losses to transfer pricing and other forms of tax evasion, particularly in the extractives sector.[8]

The main features of the consultancy will be:

- **OUTPUTS:** an inception report (no later than 20 days from commencement) that sets out the approach that will be adopted, and methods of data collection and analysis, including, for example, structured interview and focus group guides; and a final report that shows how digital transformation could help to stem the substantial losses to transfer pricing and other forms of tax evasion, particularly in the extractives sector.
- **DURATION:** about 180 person days full-time (mostly remote) spread over four to six months.

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8 See, for example, ADB (2022). *Launching a Digital Tax Administration Transformation What You Need to Know*, online source.

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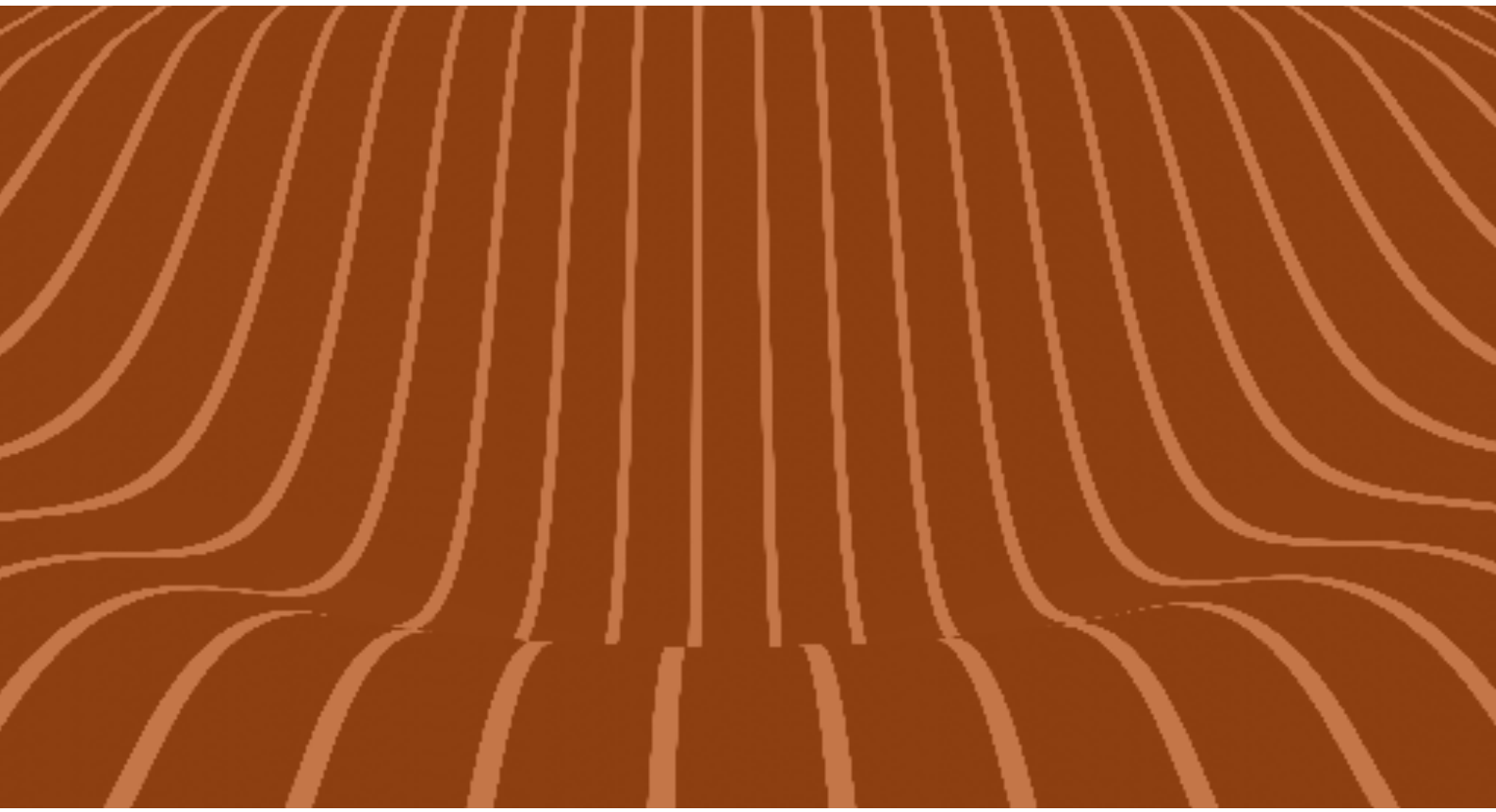

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