Annex B. Materials for presentation of the innovation model

Introduction

The innovation model proposed in this study comprises, in the form of an innovation cookbook, a total of 27 ingredients and 253 flavours that can be used for public sector innovation work, be it in ad hoc innovation efforts, in day-to-day innovation work or in an organization function of innovation of Arab public institutions and local administrations.

The table that follows presents these ingredients with some basic information for each, in order of appearance in the study text. Then, sub-annexes B.1 to B.27 present the flavours of each innovation ingredient identified, in alphabetical order of the bigrams used as short reference to the innovation ingredients.

Table B.1. Ingredients of InnoCook

Ingredient	Bigram	Guiding question	Further discussed in	# of flavours
Public-facing objectives of innovation	Op	which objective in terms of improvements tangible by the public do we want to accomplish with innovation?	Introduction	4 Op flavours
Internal-facing objectives of innovation	Oi	which objective in terms of improvements to internal operations do we want to accomplish with innovation?	Introduction	2 Oi flavours
Societal objectives of innovation	Os	which objective in terms of societal needs do we want to accomplish with innovation?	Introduction	7 Os flavours
Focus level	Fl	what are we doing with our work?	Chapter 1 Section A	5 Fl flavours
Envisaged beneficiaries	Be	for whom are we doing this work?	Chapter 1 Section A	5 Be flavours
Co-creation actors	Ca	with whom are we doing this work?	Chapter 1 Section A	4 Ca flavours
Arab region-specific government innovation themes	Ar	which Arab region-specific government innovation theme are we addressing?	Chapter 1 Section A	20 Ar flavours
Key performance indicators	Kp	what are we measuring for performance?	Chapter 1 Section A	24 Kp flavours
Technologies for innovating	Te	which key technology are we taking stock of to innovate?	Chapter 1 Section A	14 Te flavours
Indicator-level challenges	Ci	which innovation indicators are we improving in the process of our innovation work?	Chapter 1 Section B	11 Ci flavours
Global-level challenges	Cg	which global challenges or risks are we locally helping to address through the outcomes of our innovation work?	Chapter 1 Section B	26 Cg flavours
Structural patterns	Pa	how do we want to structure our innovation work across relationships between people and values?	Chapter 1 Section E	15 Pa flavours

Ingredient	Bigram	Guiding question	Further discussed in	# of flavours
Organizational elements	Oe	which organizational elements do we want to integrate in the innovation function of our institution?	Chapter 3 Section A	7 Oe flavours
Options for ideation methods	Id	which options for ideation methods do we want to consider for the innovation function of our institution?	Chapter 3 Section A	3 Id flavours
Options for public participation methods	Pp	which options for public participation methods do we want to consider for the innovation function of our institution?	Chapter 3 Section A	5 Pp flavours
Options for co-creation and innovation toolkits	Cc	which options for co-creation and innovation toolkits do we want to consider for the innovation function of our institution?	Chapter 3 Section A	4 Cc flavours
Options for participatory design methods	Pd	which options for participatory design methods do we want to consider for the innovation function of our institution?	Chapter 3 Section A	5 Pd flavours
Options for serious play methods	Sp	which options for serious play methods do we want to consider for the innovation function of our institution?	Chapter 3 Section A	3 Sp flavours
Options for gamification elements	Ge	which options for gamification elements do we want to consider for the innovation function of our institution?	Chapter 3 Section A	3 Ge flavours
Options for flat organizational designs	Fd	which options for flat organizational designs do we want to consider for the innovation function of our institution?	Chapter 3 Section A	3 Fd flavours
Innovation team dynamics	Td	what are the individual and team dynamics that we need to manage, to help the innovation team deliver successfully?	Chapter 3 Section B	10 Td flavours
Innovation process types	Pt	which process type can we best choose for further structuring our innovation work?	Chapter 3 Section B	9 Pt flavours
Innovation life cycle activities	Lc	which ideation, deliberation, evolution and assimilation activities for the innovations to be developed can we best choose for further structuring our innovation work?	Chapter 3 Section B	25 Lc flavours
Nurturing day-to-day innovation tactics	Nu	what manners can we use to nurture innovation as an integral part of the day-to-day activity in the workplace?	Chapter 3 Section D	9 Nu flavours
Issues for success	Is	what issues for the success of innovation work are we identifying within our institutions and for external beneficiaries/adopters of our innovations?	Chapter 4 Introduction, Chapter 4 Section A	7 Is flavours
Suggestions for success	Su	what suggestions for the success of innovation work are we considering, with respect to priorities and application domains of our innovation planning?	Chapter 4 Introduction, Chapter 4 Section A	11 Su flavours
Local use case innovation guidelines	Lg	with what guidelines can we build local use cases of innovation to share with others?	Chapter 4 Introduction, Chapter 4 Section B	12 Lg flavours

Source: Developed by the author.

B.1. The Ar ingredient: Arab region-specific government innovation themes

- Guiding question: which Arab region-specific government innovation theme are we addressing?
- Further discussed in: Chapter 1 Section A
- Number of flavours: 20

Individual flavours	
Ar.1. Improving service delivery in finance; education; interior; cross government affairs; utilities; labour; justice; trade and industry; transport/traffic/police; social affairs; migration; health; municipal affairs; and tourism sectors.	ESCWA (2023)
Ar.2. Promoting the Government-as-a-Platform paradigm: One platform where citizens can complete many or all government services.	World Government Summit (2023a)
Ar.3. Implementing new service delivery methods by adding digital assistants.	World Government Summit (2023a)
Ar.4. Implementing anticipatory/proactive services, bundled around a citizen's life events.	World Government Summit (2023a)
Ar.5. Implementing invisible services, completed in the back end without bothering the citizen.	World Government Summit (2023a)
Ar.6. Improving digital public service design and delivery for greater civic engagement and citizen participation.	OECD (2022)
Ar.7. Ensuring marginalized populations are not left behind.	World Government Summit (2023a)
Ar.8. Managing data as an infrastructure, and improving the openness, quality, flow and use of government data.	World Government Summit (2023b)
Ar.9. Managing cybersecurity in a holistic manner, beyond defensive software.	World Government Summit (2023b)
Ar.10. Promoting digital standards for secure platforms, logins, and data.	World Government Summit (2023a)
Ar.11. Moving forward to maturity and readiness for artificial intelligence.	World Government Summit (2023b)
Ar.12. Keeping government digitization at a fast pace, streamlining processes, removing bureaucracy and eliminating excessive regulation.	World Government Summit (2023b)
Ar.13. Establishing formal government service structures and budgets, with separate legal government entity dedicated to government services.	World Government Summit (2023a)
Ar.14. Moving away from organizational silos to open collaborations.	World Government Summit (2023a)
Ar.15. Establishing an Arab platform for government administrative exchange of expertise and data.	World Government Summit (2023b)
Ar.16. Relating the government talent strategy to government technology.	World Government Summit (2023b)
Ar.17. Reforming the government talent and incentives policies with new skills, new mix of team members, and new incentives.	World Government Summit (2023a)
Ar.18. Establishing cooperation models between the government and private sectors and frameworks for digital services.	World Government Summit (2023b)
Ar.19. Enabling local emerging companies to work with the government sector.	World Government Summit (2023b)
Ar.20. Unlocking innovation through cross-border collaboration.	OECD (2022)

Source: Author analysis based on the referenced source reports.

B.2. The Be ingredient: Envisaged beneficiaries

- Guiding question: for whom are we doing this work?
- Further discussed in: Chapter 1 Section A
- Number of flavours: 5

Individual flavours	Sampled trends and practices[a]
Be.1. the governments themselves, in the sense of improved operations quality	- Key enablers: Big data and cloud solutions enable governments to federate data sources, simplify and automate the filling in of forms for increased efficiency of eGovernment services (EU4[b]). - eID: the key to accessing eGovernment (EU16). - Core government systems remain disconnected, with point-to-point and unsecured data exchanges (WB2). - Core Government Systems: Core systems for central government operations (WB13). - Core Government Systems: Open-source software (WB15). Impact of the COVID-19 pandemic: Procurement processes are improved to allow responding expeditiously to urgent demands (UND19).
Be.2. national citizens and businesses	- User Support: Providing Online Help (EU35). - (Public Service Delivery: Online service portals (WB17). - Public Service Delivery: Tax online services and e-filing (WB18). - Public Service Delivery: E-payment services (WB20). - Public Service Delivery: Social insurance/pension online services (WB21). Public Service Delivery: Job portal (WB22).
Be.3. incoming citizens and businesses	- Cross-border mobility: Seamless and interoperable services allow citizens and businesses access to user-friendly online services in other countries, delivering on the potential of a Digital Single Market (EU3). - Cross-border online availability: accessing services across Europe (EU20, EU44). - Cross-border user support: assisting international users (EU21, EU45). - Cross-border eID: online identification across borders (EU22). - Cross-border eDocuments: online files across borders (EU23, EU47). Rethink the user: tailor services for nationals as well as cross-border users (EU25).
Be.4. all of society, explicitly including people at disadvantage and at crisis	- Rethink the user: ensure perceivable, operable, understandable and robust websites for persons with disabilities (EU26). - Innovative COVID-19 Responses Theme 3: Social solidarity and caring (OOM3). - Focusing on the Overlooked Theme 1: New opportunities for the often neglected (OOM9). - Focusing on the Overlooked Theme 2: Bridging the urban-rural divide (OOM10). - Trend 3: New methods for preserving identities and strengthening equity/Enabling families and communities (OOM30). Digital transformation in the public sector: Cloud computing facilitates disaster response and humanitarian efforts (UND32).
Be.5. the broader cross-border region	- (Governing Cross- Border Challenges Theme 1: Building cross-border governance bodies (OOM16). - Governing Cross- Border Challenges Theme 2: Innovative networks tackling cross-border collaboration (OOM17). - Governing Cross- Border Challenges Theme 3: Exploring emerging governance system dynamics (OOM18). - Surfacing Insights and Experimenting Across Borders Theme 2: Experimenting and testing across borders (OOM20). - Delivering and Enabling Impactful Cross-Border Solutions Theme 1: Delivering joint cross-border policy and solution-oriented services (OOM21). Delivering and Enabling Impactful Cross-Border Solutions Theme 2: Digital architecture enabling cross-border innovation (OOM22).

Source: Compiled by the Author from Dener and others, 2021; EC CONNECT, 2020, 2021, 2022; OECD OPSI & MBRCGI, 2020a, 2020c, 2021-2022a-c, 2023; United Nations, Department of Economic and Social Affairs, 2022; World Bank, 2022.

[a] The trends and practices have been selected from the overall set presented in Annex A.2, which also provide associated examples of implemented innovation cases.

[b] Identification code assigned to each trend and practice based on an abbreviation of the author and sequential numbering.

B.3. The Ca ingredient: Co-creation actors

- Guiding question: with whom are we doing this work?
- Further discussed in: Chapter 1 Section A
- Number of flavours: 4

Individual flavours	Sampled trends and practices[a]
Ca.1. across the government, in the sense of multiple government branches coming together	• (EC DG CONNECT 2022) Realign the user journey: overcome service gaps across multiple layers of government (EU29[b]). • Reinforce the interoperability ambition: promote interoperable data exchange to deliver more services proactively (EU31). • GovTech Enablers: Data governance institutions (WB30). • GovTech Enablers: Whole-of-government approach (WB32). • Towards data-centric e-government: optimize government data use for productivity, accountability, inclusivity, trustworthiness of public institutions, in line with SDG16 principles (UND9). Digital transformation in the public sector: Agile and adaptive government is flexible in, inter alia, policymaking, regulation, procurement and workforce (UND36).
Ca.2. across the borders, in the sense of multiple governments in the cross-border region coming together	• Cross-Border eID: Borderless Online Identification (EU46). • Delivering and Enabling Impactful Cross-Border Solutions Theme 3: Adding a cross-border dimension to upskilling and capacity building (OOM23). • Regional challenges, opportunities and initiatives: UN Regional Commissions play an important leading or coordinating role (UND1). • Regional challenges, opportunities and initiatives: focus on digital trade, digital economy, open government, open data, user-centric evaluation, disaster risk mitigation, large-scale digitalization of core public sector functions, adoption of national/regional strategic digital policies and implementation plans (UND2). • Regional challenges, opportunities and initiatives: importance of regional cooperation and relevance of digital transformation for specific regional challenges and the SDGs (UND3). International and Regional Cooperation (ITU18, ITU36, ITU54).
Ca.3. multiple-helix actors, such as the private sector, the academia, the civil society as well as the media	• Few governments record or report transparently GovTech investments, results achieved, and challenges faced (WB1). • Few countries engage in public-private partnerships to draw on private sector skills, innovations and investments to address public sector challenges (WB8). • Surfacing Insights and Experimenting Across Borders Theme 1: Surfacing ground-up insights and collective intelligence (OOM19). • Local e-government development: need for involvement of local residents, public and private sector entities, NGOs and INGOs/IGO, incentives for SMEs to partner in innovative smart city projects and sharing of successful smart city initiatives (UND5). • Impact of the COVID-19 pandemic: Governments upgrade information-sharing systems between health-care providers, government agencies and the public (UND27). Importance of engaging the private sector: Governments invest more in R&D for high-growth and high-risk areas (UND28).
Ca.4. all of society, in the sense of all citizens	• Only few multifunctional citizen participation portals allow to submit petitions, publish citizen inputs, provide anonymous feedback, or post government's response (WB6). • E-Participation: rising of multi-function platforms, ideation forums, new policy consultations/e-petitions, opinion surveys, complaint filing, corruption reporting, idea/innovation generation (UND6). • E-Participation: boundaries between public and private initiatives blur by private and NPO platforms for citizen action or user feedback (UND7). • Digital transformation in the public sector: Governments empower and engage the public in development discussions and decisions on an ongoing basis (UND29). • Leaving no one behind in the digital society: equity innovation that promotes equity, often with multistakeholder input (UND40). Leaving no one behind in the digital society: inclusive innovation, via service development for and by those excluded from mainstream development (UND41).

Source: Compiled by the Author from Dener and others, 2021; EC CONNECT, 2022; ITU, 2020a, 2020b, 2021, 2022a, 2022b; OECD OPSI & MBRCGI, 2021-2022b-c; United Nations, Department of Economic and Social Affairs, 2020, 2022; World Bank, 2022.

[a]   The trends and practices have been selected from the overall set presented in Annex A.2, which also provide associated examples of implemented innovation cases.

[b]   Identification code assigned to each trend and practice based on an abbreviation of the author and sequential numbering.

B.4. The Cc ingredient: Options for co-creation and innovation toolkits

- Guiding question: which options for co-creation and innovation toolkits do we want to consider for the innovation function of our institution?
- Further discussed in: Chapter 3 Section A
- Number of flavours: 4

Individual flavours	References for specific flavours	Introductory references on co-creation and innovation toolkits
Cc.1. OGP collection	OGP. (June 4, 2020). *Taking the OGP Co-Creation Process Online – Online Tools & Platforms*. Available from https://www.opengovpartnership.org/ documents/taking-the-ogp-co-creation-process-online-online-tools-platforms/.	• IxDF. (October 27, 2021). *What is Co-Creation*? Interaction Design Foundation Topics. Available from https://www.interaction-design.org/literature/topics/co-creation. • LIVING INNOVATION. (2021). *Co-Creation Toolkit: A Guidance on the design, development and implementation of effective co-creation in industry-citizen collaboration settings*. Available from https://www.living-innovation.net/news/article?id=212&title=new-toolkit-for-effective-co-creation. • Reynolds, S. (September 29, 2021). Your Co-Creation Guide: Everything You Need to Know. In *Vurvey.ai Resources*. Available from https://vurvey.ai/resources/co-creation/co-creation-guide/. • Manual Thinking. (n.d.). *Tools and spaces for co-creation/Methods*. Available from https://manualthinking.com/methods/.
Cc.2. OECD OPSI collection	OECD OPSI. (n.d.). *Toolkit Navigator: Putting innovation theory into practice*. Available from https://oecd-opsi.org/toolkit-navigator/.	
Cc.3. UNaLAB collection	UNaLAB. (n.d.). *Tools for Co-creation*. Available from https://unalab.enoll.org/.	
Cc.4 SAP AppHaus collection	SAP AppHaus. (n.d.c). *Methods: Practice Human-Centered Innovation Step by Step*. Available from https://apphaus.sap.com/toolkit/methods.	

Source: Developed by the Author.

B.5. The Cg ingredient: Global-level challenges

- Guiding question: which global challenges or risks are we locally helping to address through the outcomes of our innovation work?
- Further discussed in: Chapter 1 Section B
- Number of flavours: 26

Groups of flavours	Individual flavours	Interpretation
Challenges for the SDGs	Cg-SDG.1 Help achievement of Goal 1. No poverty	End poverty in all its forms everywhere
	Cg-SDG.2 Help achievement of Goal 2. Zero hunger	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
	Cg-SDG.3 Help achievement of Goal 3. Good health and well-being	Ensure healthy lives and promote well-being for all at all ages
	Cg-SDG.4 Help achievement of Goal 4. Quality education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
	Cg-SDG.5 Help achievement of Goal 5. Gender equality	Achieve gender equality and empower all women and girls
	Cg-SDG.6 Help achievement of Goal 6. Clean water and sanitation	Ensure availability and sustainable management of water and sanitation for all
	Cg-SDG.7 Help achievement of Goal 7. Affordable and clean energy	Ensure access to affordable, reliable, sustainable and modern energy for all
	Cg-SDG.8 Help achievement of Goal 8. Decent work and economic growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
	Cg-SDG.9 Help achievement of Goal 9. Industry, innovation and infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Groups of flavours	Individual flavours	Interpretation
	Cg-SDG.10 Help achievement of Goal 10. Reduced inequalities	Reduce inequality within and among countries
	Cg-SDG.11 Help achievement of Goal 11. Sustainable cities and communities	Make cities and human settlements inclusive, safe, resilient and sustainable
	Cg-SDG.12 Help achievement of Goal 12. Responsible consumption and production	Ensure sustainable consumption and production patterns
	Cg-SDG.13 Help achievement of Goal 13. Climate action	Take urgent action to combat climate change and its impacts
	Cg-SDG.14 Help achievement of Goal 14. Life below water	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
	Cg-SDG.15 Help achievement of Goal 15. Life on land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
	Cg-SDG.16 Help achievement of Goal 16. Peace, justice and strong institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
	Cg-SDG.17 Help achievement of Goal 17. Partnership for the Goals	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development
Challenges for global risks	Cg-GRR.1 Help mitigation of global economic risks	Asset bubble bursts; Collapse of a systemically important industry or supply chain; Debt crises; Failure to stabilize price trajectories; Proliferation of illicit economic activity; Prolonged economic downturn
	Cg-GRR.2 Help mitigation of global environmental risks	Biodiversity loss and ecosystem collapse; Failure of climate-change adaption; Failure to mitigate climate change; Large-scale environmental damage incidents; Natural disasters and extreme weather events; Natural resource crises
	Cg-GRR.3 Help mitigation of global geopolitical risks	Geoeconomic confrontation; Ineffectiveness of multilateral institutions and international cooperation; Interstate conflict; State collapse or severe instability; Terrorist attacks; Use of weapons of mass destruction
	Cg-GRR.4 Help mitigation of global societal risks	Chronic diseases and health conditions; Collapse or lack of public infrastructure and services; Cost-of-living crisis; Employment crises; Erosion of social cohesion and societal polarization; Infectious diseases; Large-scale involuntary migration; Misinformation and disinformation; Severe mental health deterioration
	Cg-GRR.5 Help mitigation of global technological risks	Adverse outcomes of frontier technologies; Breakdown of critical information infrastructure; Digital inequality and lack of access to digital services; Digital power concentration; Widespread cybercrime and cyber insecurity
Challenges for global development	Cg-WDR.1 Help development through Global Value Chains	Drivers of participation in GVCs; Consequences of GVCs for development; Macroeconomic implications of GVCs; Impact of GVCs on the environment; GVCs and technological change; Policies to enhance GVC participation; Policies for GVC inclusion and sustainability; GVC and cooperation on trade; GVCs and cooperation beyond trade
	Cg-WDR.2 Help development through Data for Better Lives	Harnessing the value of data for the poor; Data as a force for public good; Data as a resource for the private sector; Creative reuses of data for greater value; Data infrastructure policy: Ensuring equitable access for poor people and poor countries; Data policies, laws, and regulations: Creating a trust environment; Creating value in the data economy: The role of competition, trade, and tax policy; Institutions for data governance: Building trust through collective action; Creating

Groups of flavours	Individual flavours	Interpretation
		an integrated national data system
	Cg-WDR.3 Help development through Finance for an Equitable Recovery	Emerging risks to the recovery; Resolving bank asset distress; Restructuring firm and household debt; Lending during the recovery and beyond; Managing sovereign debt; Policy priorities for the recovery
	Cg-WDR.4 Help development through Migrants, Refugees and Societies	Changing patterns, needs, and risks; Origin countries: Managing migration for development; Destination countries: Maximizing gains through economic and social policies; Refugees: Managing with a medium-term perspective; Distressed migrants: Preserving dignity; Making migration work better

Source: Author's analysis based on United Nations Statistics Division, 2020, 2021, 2022, 2023; World Economic Forum, 2020, 2021, 2022, 2023; World Bank, 2020, 2021, 2022b, 2023.

B.6. The Ci ingredient: Indicator-level challenges

- Guiding question: which innovation indicators are we improving in the process of our innovation work?
- Further discussed in: Chapter 1 Section B
- Number of flavours: 11

Groups of flavours	Individual flavours	Indicator sub-categories
Challenges for IES indicators	Ci-IES1. Improve IES Framework conditions indicators	1.1 Human resources: 1.1.1 New doctorate graduates (in STEM; 1.1.2 Population aged 25-34 with tertiary education; 1.1.3 Lifelong learning; 1.2 Attractive research systems: 1.2.1 International scientific co-publications; 1.2.2 Top 10% most cited publications; 1.2.3 Foreign doctorate students; 1.3 Digitalisation: 1.3.1 Broadband penetration; 1.3.2 Individuals who have above basic overall digital skills
	Ci-IES2. Improve IES Investments indicators	2.1 Finance and support: 2.1.1 R&D expenditure in the public sector; 2.1.2 Venture capital expenditures; 2.1.3 Direct government funding and government tax support for business R&D; 2.2 Firm investments: 2.2.1 R&D expenditure in the business sector; 2.2.2 Non-R&D innovation expenditures; 2.2.3 Innovation expenditures per person employed in innovation-active enterprises; 2.3 Use of information technologies: 2.3.1 Enterprises providing training to develop or upgrade ICT skills of their personnel; 2.3.2 Employed ICT specialists
	Ci-IES3. Improve IES Innovation activities indicators	3.1 Innovators: 3.1.1 SMEs with product innovations; 3.1.2 SMEs with business process innovations; 3.2 Linkages: 3.2.1 Innovative SMEs collaborating with others; 3.2.2 Public-private co-publications; 3.2.3 Job-to-job mobility of Human Resources in Science & Technology; 3.3 Intellectual assets: 3.3.1 PCT patent applications; 3.3.2 Trademark applications; 3.3.3 Design applications
	Ci-IES4. Improve IES Impacts indicators	4.1 Employment impacts: 4.1.1 Employment in knowledge-intensive activities; 4.1.2 Employment in innovative enterprises; 4.2 Sales impacts: 4.2.1 Medium and high-tech product exports; 4.2.2 Knowledge-intensive services exports; 4.2.3 Sales of product innovations; 4.3 Environmental sustainability: 4.3.1 Resource productivity; 4.3.2 Air emissions by fine particulates PM2.5 in Industry; 4.3.3 Development of environment-related technologies
Challenges for GII indicators	Ci-GII1. Improve GII Institutions indicators	1.1. Institutional environment (Operational stability for businesses; Government effectiveness); 1.2. Regulatory environment (Regulatory quality; Rule of law; Cost of redundancy dismissal); 1.3. Business environment (Policies for doing business; Entrepreneurship policies and culture)
	Ci-GII2. Improve GII Human capital and research indicators	2.1. Education (Expenditure on education; Government funding/pupil; School life expectancy; PISA scales in reading, maths and science; Pupil–teacher ratio); 2.2. Tertiary education (Tertiary enrolment; Graduates in science and engineering; Tertiary inbound mobility); 2.3. Research and development (Researchers; Gross expenditure on R&D; Global corporate R&D investors; QS university ranking)
	Ci-GII3. Improve GII Infrastructure	3.1. Information and communication technologies (ICT access; ICT use; Government's online service; E-participation); 3.2. General infrastructure

Groups of flavours	Individual flavours	Indicator sub-categories
	indicators	(Electricity output; Logistics performance; Gross capital formation); 3.3. Ecological sustainability (GDP/unit of energy use; Environmental performance; ISO 14001 environment)
	Ci-GII4. Improve GII Market sophistication indicators	4.1. Credit (Finance for start-ups and scaleups; Domestic credit to private sector; Loans from microfinance institutions); 4.2. Investment (Market capitalization; Venture capital investors; Venture capital recipients; Venture capital received); 4.3. Trade, diversification and market scale (Applied tariff rate; Domestic industry diversification; Domestic market scale)
	Ci-GII5. Improve GII Business sophistication indicators	5.1. Knowledge workers (Knowledge-intensive employment; Firms offering formal training; GERD performed by business; GERD financed by business; Females employed w/advanced degrees); 5.2. Innovation linkages (University–industry R&D collaboration; State of cluster development; GERD financed by abroad; Joint venture/strategic alliance deals; Patent families); 5.3. Knowledge absorption (Intellectual property payments; High-tech imports; ICT services imports; Foreign direct investment net inflows; Research talent)
	Ci-GII6. Improve GII Knowledge and technology outputs indicators	6.1. Knowledge creation (Patents by origin; PCT patents by origin; Utility models by origin; Scientific and technical articles; Citable documents H-index); 6.2. Knowledge impact (Labor productivity growth; Unicorn valuation; Software spending; High-tech manufacturing); 6.3. Knowledge diffusion (Intellectual property receipts; Production and export complexity; High-tech exports; ICT services exports; ISO 9001 quality)
	Ci-GII7. Improve GII Creative outputs indicators	7.1. Intangible assets (Intangible asset intensity; Trademarks by origin; Global brand value; Industrial designs by origin); 7.2. Creative goods and services (Cultural and creative services exports; National feature films; Entertainment and media market; Creative goods exports); 7.3. Online creativity (Generic top-level domains; Country-code TLDs; GitHub commits; Mobile app creation)

Source: Author's analysis based on EC RTD and Hollanders, 2023 and WIPO, 2023.

B.7. The Fd ingredient: Options for flat organizational designs

- Guiding question: which options for flat organizational designs do we want to consider for the innovation function of our institution?
- Further discussed in: Chapter 3 Section A
- Number of flavours: 3

Individual flavours	References for specific flavours	Introductory references on flat organizational designs
Fd.1. Flatarchy	- Morgan, J. (July 5, 2015). *The 5 Types of Organizational Structures: Part 4, Flatarchies*. Forbes. Available from https://www.forbes.com/. - Harappa. (n.d.). Understanding the Flatarchy Organizational Structure. In *Harappa Blog*. Available from https://harappa.education/harappa-diaries/flat-organizational-structure/#heading_1.	- Indeed. (February 4, 2023). What Is a Flattened Organizational Structure? (Plus Tips). In *Indeed/Career Guide*. Available from https://www.indeed.com/career-advice/career-development/flattened-organizational-structure. - Bretones, L. (September 7, 2020). What is Sociocracy? Introducing a Toolkit for Agile Organizations. In *Holaspirit Blog*. Available from https://www.holaspirit.com/blog/sociocracy. - Cooperatives UK. (n.d.). *Sociocracy in co-operative organizations*. Available from https://www.uk.coop/resources/sociocracy-co-operative-organisations. - Rossingol, N. (May 18, 2023). What is Holacracy & How Can it Transform the Workplace? In *Runn Blog*. Available from https://www.runn.io/blog/holacracy.
Fd.2. Sociocracy	- Sociocracy.info. (n.d.). *Sociocracy – a deeper democracy:* Collaborative Governance – Transparent, Inclusive and Accountable. Available from https://www.sociocracy.info/. - Sociocracy 3.0. (n.d.). *Sociocracy 3.0 – free social technology for growing agile and resilient organizations*. Available from https://sociocracy30.org/.	

Individual flavours	References for specific flavours	Introductory references on flat organizational designs
Fd.3. Holacracy	Holacracy. (n.d.a). *Holacracy - The Management Framework For a Complex World*. Available from https://www.holacracy.org/	• Zelenz, S. (June 2, 2023). Holacracy: Definition, Origin, Benefits and Examples. In *Indeed/Career Guide*. Available from https://www.indeed.com/career-advice/career-development/holacracy-definition. • Bernstein, E., Bunch, J., Canner, N., & Lee, M.Y. (2016). Beyond the Holacracy Hype: The overwrought claims—and actual promise—of the next generation of self-managed teams. *Harvard Business Review*. Available from https://hbr.org/2016/07/beyond-the-holacracy-hype.

Source: Developed by the Author.

B.8. The Fl ingredient: Focus level

- Guiding question: what are we doing with our work?
- Further discussed in: Chapter 1 Section A
- Number of flavours: 5

Individual focus level flavours	Sampled trends and practices[a]
Fl.1. use of technology to provide new service capabilities and improved quality of service	• Transparency: Machine learning algorithms provide users with accurate estimations for the duration of the service delivery. (EU2[b]) • Substantial interest in developing government gateways, service bus, interoperability frameworks and cloud platforms for government enterprise architecture. (WB3) • AI, chatbots, blockchain, IoT and drones, inter alia, are used to reduce administrative burden, strengthen oversight and better service quality (WB10). • Core Government Systems: Government cloud (WB11). • GovTech Enablers: Digital signature (WB34). • Digital government at the local level: key areas include smart cities, intelligent transportation, precision agriculture and health care (UND38).
Fl.2. re-organization of operational structures and service-delivery processes made possible by, and to take better advantage of, the capabilities offered by technology	• Efforts are needed to expand the issuance of unique national IDs at birth and civil registration (WB9). • Core Government Systems: Shared platforms (WB14). • Seamless Government Theme 1: Invisible government (OOM6). • Seamless Government Theme 2: Matrixed government (OOM7). • Seamless Government Theme 3: Anticipatory government (OOM8). • Digital transformation in the public sector: Cognitive government leverages hindsight, real-time data, and foresight to drive policy- and decision-making (UND35).
Fl.3. regulation of new technology so that it can be used in ways preserving, and even advancing, citizens' rights	• Trend 1: New forms of accountability for a new era of government/Algorithmic accountability (OOM24). • Trend 1: New forms of accountability for a new era of government/New aspects of transparency (OOM25). • Trend 3: New methods for preserving identities and strengthening equity/Counteracting the creation of a gig economy underclass (OOM31). • (The role of digital government in the COVID-19 pandemic: consider unintended consequences of technology use and actively protect sensitive data and people's privacy and security (UND16). • Digital transformation in the public sector: Cybercrime and skills gaps challenge law enforcement, especially in cross-border contexts (UND33). • Digital transformation in the public sector: Non-uniform data protection regulations create conflicts for data sharing across jurisdictions (UND34).
Fl.4. institutionalization of innovation as a core policy and function, accompanied by	• Digital government strategies and action plans establish institutions to support GovTech with focus on a whole-of-government approach, data-driven public sector, digital skills development, and innovation labs (WB7). • Core Government Systems: National strategy on disruptive/innovative technologies (WB16).

Individual focus level flavours	Sampled trends and practices[a]
establishment of new entities with a clear innovation mandate	• GovTech Enablers: GovTech institutions (WB29). • (GovTech Enablers: Public sector innovation strategy or program (WB36). • GovTech Enablers: Public sector innovation entity (WB37). • GovTech Enablers: GovTech start-ups (WB38).
Fl.5. building of skills and culture enabling to take stock of new technologies	• GovTech Enablers: Digital skills strategy or program (WB35). • Upskilling and Investing in People Theme 1: Investing in the public as a critical resource (OOM14). • Upskilling and Investing in People Theme 2: Upskilling the public service to unlock the potential of government (OOM15). • Towards data-centric e-government: overcome low understanding of data/data science, low political priority, low data leadership, resource constraints, quality, security and privacy concerns (UND10). • Towards data-centric e-government: harvesting public value from data requires long-term vision and mastering data governance economics, politics, security, privacy via whole-of-government approaches, frameworks, strategies, leadership and data ecosystems (UND11). • Capacities for digital transformation: put people needs first, promote digital inclusion, ensure that all can access new technologies to improve their wellbeing (UND14).

Source: Compiled by the Author from Dener and others, 2021; EC CONNECT, 2020; OECD OPSI & MBRCGI, 2020b, 2020e, 2023; World Bank, 2022; United Nations, Department of Economic and Social Affairs, 2020, 2022.

[a]   The trends and practices have been selected from the overall set presented in Annex A.2, which also provide associated examples of implemented innovation cases.

[b]   Identification code assigned to each trend and practice based on an abbreviation of the author and sequential numbering.

B.9. The Ge ingredient: Options for gamification elements

- Guiding question: which options for gamification elements do we want to consider for the innovation function of our institution?
- Further discussed in: Chapter 3 Section A
- Number of flavours: 3

Individual flavours	References for specific flavours	Introductory references on gamification elements
Ge.1. Periodic Table of Gamification Elements	Marczewski, A. (n.d.). *Periodic Table of Gamification Elements: 52 Gamification Mechanics and Elements*. Available from https://www.gamified.uk/user-types/gamification-mechanics-elements/.	• Domagala, A. (June 22, 2020). Gamification. In *CapGemini Insights*. Available from https://www.capgemini.com/dk-en/insights/expert-perspectives/gamification/. • Alimansyah, E. (April 17, 2023). The Gamification Cheatsheet: Key Elements and Best Practices. In *Bootcamp*. Available from https://bootcamp.uxdesign.cc/the-gamification-cheatsheet-key-elements-and-best-practices-d14cc3f08bad. • Aristek Systems. (September 19, 2023). *Gamification in eLearning: Essential Elements*. Available from https://aristeksystems.com/blog/essential-elements-of-gamification-in-elearning/. • Lahey, J. (n.d.). *Story Pyramid of Gamification Elements*. Available from https://workforcecommunication.com/story-pyramid-of-gamification-elements/
Ge.2. Octalysis Framework	Chou, Y.-K. (n.d.). *The Octalysis Framework for Gamification & Behavioral Design*. Available from https://yukaichou.com/gamification-examples/octalysis-complete-gamification-framework/.	
Ge.3. Mambo.IO collection	Kanazawa, M. (June 7, 2023). 108 Gamification Elements and Mechanics to Encourage Engagement. In: *Mambo.IO Blog*. Available from https://mambo.io/blog/gamification-elements-and-mechanics.	

Source: Developed by the Author.

B.10. The Id ingredient: Options for ideation methods

- Guiding question: which options for ideation methods do we want to consider for the innovation function of our institution?
- Further discussed in: Chapter 3 Section A
- Number of flavours: 3

Individual flavours	References for specific flavours	Introductory references on ideation methods
Id.1. MindTools	MindTools. (n.d.). *MindTools - Develop your personal wellbeing and career skills*. Available from https://www.mindtools.com/.	• Smart, J. (May19, 2023). 37 brainstorming techniques to unlock team creativity. In *SessionLab Blog*. Available from https://www.sessionlab.com/blog/brainstorming-techniques/.
Id.2. Gamestorming	Gamestorming. (n.d.). *Gamestorming – A toolkit for innovators, rule-breakers and changemakers*. Available from https://gamestorming.com/.	• Payne, W. (September 13, 2023). Mastering Ideation: Techniques and Strategies. In *IIENSTITU Blog*. Available from https://www.iienstitu.com/en/blog/mastering-ideation-techniques-and-strategies.
Id.3. Google collections on Ideation techniques and Ideation methods	• Ideation techniques [Google Search results]: https://www.google.com/search?q=ideation+techniques. (November 14, 2023). • Ideation methods [Google Search results]: https://www.google.com/search?q=ideation+methods. (November 14, 2023)*:*	• Dam, R.F., & Siang, T.Y. (2020). Introduction to the Essential Ideation Techniques which are the Heart of Design Thinking. In *Interaction Design Foundation/Literature*. Available from https://www.interaction-design.org/literature/article/introduction-to-the-essential-ideation-techniques-which-are-the-heart-of-design-thinking. • Strimaityte, A. (November 26, 2019). 9 Best Exercises to Spark Creativity in Ideation. In *Innovation Lab Blog*. Available from https://innovationlab.net/blog/9-best-exercises-to-spark-creativity-in-ideation/

Source: Developed by the Author.

B.11. The Is ingredient: Issues for success

- Guiding question: what issues for the success of innovation work are we identifying within our institutions and for external beneficiaries/adopters of our innovations?
- Further discussed in: Chapter 4 Introduction, Chapter 4 Section A
- Number of flavours: 7

Groups of flavours	Individual flavours
Preference of public-facing over internal-facing innovations as a starting point	Is.1. Publics having pressing needs that can be met with innovation at the delivery end of public sector products and services
	Is.2. Publics having limited or no trust in the potential of public institutions to innovate
	Is.3. Public sector innovation plans facing severe technology and implementation risks because of the need to amend existing ways and systems of work
Preference of local use case-based over global use cased-based innovations as a starting point	Is.4. Local contexts in need of innovation, having specific needs very deeply rooted in local factors, that are hard to understand for non-locals
	Is.5. Global contexts in need of innovation, encompassing local contexts of high heterogeneity
	Is.6. Centrally based innovation efforts that face difficulties in diffusion and adoption
	Is.7. Centrally based innovation efforts that face difficulties in diffusion and adoption by extramural stakeholders in lieu of own innovation potential

Source: Developed by the Author.

B.12. The Kp ingredient: Key performance indicators

- Guiding question: what are we measuring for performance?
- Further discussed in: Chapter 1 Section A
- Number of flavours: 24

Groups of flavours	Individual flavours
Service availability and sophistication KPIs	Kp1.1. Portal services sophistication level
	Kp1.2. Portal personalization
	Kp1.3. Mobile services sophistication level
	Kp1.4. Mobile services availability level
	Kp1.5. Applications availability on various mobile platforms
	Kp1.6. Availability of languages on the portal
	Kp1.7. Feedback enablement through portal
	Kp1.8. Persons with disability enablement through portal
	Kp1.9. Availability of languages on mobile applications
	Kp1.10. Feedback enablement through mobile
	Kp1.11. Persons with disability enablement through mobile
	Kp1.12. Channels interoperability
	Kp1.13. Channels security level
	Kp1.14. Open data provisioning
	Kp1.15. Open data delivery format
Service usage and user satisfaction KPIs	Kp2.1. Service usage over portal (service level)
	Kp2.2. Service usage over mobile (service level)
	Kp2.3. Overall usage over portal (entity level)
	Kp2.4. Overall usage over mobile (entity level)
	Kp2.5. User satisfaction over portal
	Kp2.6. User satisfaction over mobile
Public outreach KPIs	Kp3.1. Percentage of new services accompanied by marketing campaigns (from services assessed in the index)
	Kp3.2. Percentage of new services accompanied by marketing campaigns (from total services at the entity level)
	Kp3.3. Availability of support tools

Source: Developed by the Author based on ESCWA, 2023.

B.13. The Lc ingredient: Innovation life cycle activities

- Guiding question: which ideation, deliberation, evolution and assimilation activities for the innovations to be developed can we best choose for further structuring our innovation work?
- Further discussed in: Chapter 3 Section B
- Number of flavours: 25

Groups of flavours	Individual flavours
IDEA Lifecycle Ideation Phase	Lc-I.1. Collaboration
	Lc-I.2. Idea management
	Lc-I.3. Data visualization
	Lc-I.4. Employee engagement
	Lc-I.5. Gamification
IDEA Lifecycle Deliberation Phase	Lc-D.1. Participation
	Lc-D.2. Crowdsourcing
	Lc-D.3. Debating
	Lc-D.4. Argumentation
	Lc-D.5. Semantic modelling
	Lc-D.6. Sentiment analysis
	Lc-D.7. Opinion mining
	Lc-D.8. Open innovation
	Lc-D.9. Policy making

Groups of flavours	Individual flavours
IDEA Lifecycle Evolution Phase	Lc-E.1. Project management
	Lc-E.2. Performance appraisal
	Lc-E.3. Knowledge management
	Lc-E.4. IT management
	Lc-E.5. Data governance
	Lc-E.6. Process management
	Lc-E.7. Performance management
IDEA Lifecycle Assimilation Phase	Lc-A.1. Online community
	Lc-A.2. Social media management
	Lc-A.3. Advocacy
	Lc-A.4. Feedback management

Source: Developed by the Author.

B.14. The Lg ingredient: Local use case innovation guidelines

- Guiding question: with what guidelines can we build local use cases of innovation to share with others?
- Further discussed in: Chapter 4 Introduction, Chapter 4 Section B
- Number of flavours: 12

Groups of flavours	Individual flavours
Framing innovation work: providing an overall framework within which the innovation effort will take place	Lg.1. Bringing a small group of stakeholders together
	Lg.2. Formulating a mission for supporting and sharing a local use case innovation across its life cycle
	Lg.3. Taking a think big/start small and a dolphin, not whales approach
	Lg.4. Preferring technologies with a fast availability and learning curve
	Lg.5. Preferring to build upon, rather than amend, what exists already
	Lg.6. Identifying a proper publication venue for the innovation
	Lg.7. Considering broader publication venues
	Lg.8. Considering submitting documented innovation efforts for recognition as Digital Public Goods
	Lg.9. Using the innovation model in a lean manner
Formatting innovation work: defining a specific format that will structure the way in which innovation work will take place, within the framework chosen	Lg.10. Considering organizing the innovation effort in a workshop format
	Lg.11. Considering organizing the innovation effort in a hackathon format
	Lg.12. Considering organizing the innovation effort in a gamified format

Source: Developed by the Author.

B.15. The Nu ingredient: Nurturing day-to-day innovation tactics

- Guiding question: what manners can we use to nurture innovation as an integral part of the day-to-day activity in the workplace?
- Further discussed in: Chapter 3 Section D
- Number of flavours: 9

Individual flavours
Nu.1. An innovation whistle
Nu.2. An innovation wall
Nu.3. An innovation workbench and space
Nu.4. An innovation blueprint and an innovation canvas
Nu.5. Innovation gamestorming
Nu.6. Innovation points
Nu.7. Technology innovationization
Nu.8. Innovation ventures, innovation missions, innovation projects
Nu.9. Innovation badges

Source: Developed by the Author.

B.16. The Oe ingredient: Organizational elements

- Guiding question: which organizational elements do we want to integrate in the innovation function of our institution?
- Further discussed in: Chapter 3 Section A
- Number of flavours: 7

Individual flavours
Oe.1. People involved in innovation work
Oe.2. Structures undertaking innovation work
Oe.3. A recruitment policy for staffing innovation work
Oe.4. Process paradigms for carrying out innovation work
Oe.5. Motives for carrying out innovation work
Oe.6. A power and responsibility balance for innovation work
Oe.7. Rules and shared values for innovation work

Source: Developed by the Author.

B.17. The Oi ingredient: Internal-facing objectives of innovation

- Guiding question: which objective in terms of improvements to internal operations do we want to accomplish with innovation?
- Further discussed in: Introduction
- Number of flavours: 2

Individual flavours	The objective is met when…
Oi.1. Innovation for effectiveness	Better effectiveness of government work can be demonstrated because of innovation. Effectiveness, in this context, is meant in the sense of achieving a bigger part of set internal goals.
Oi.2. Innovation for efficiency	Better efficiency of government work can be demonstrated as a result of innovation. Efficiency, in this context, is meant in the sense of improving internal result/cost ratios, not necessarily by cutting down costs, but also, and perhaps more importantly, by bringing about more results with the same costs.

Source: Developed by the Author.

B.18. The Op ingredient: Public-facing objectives of innovation

- Guiding question: which objective in terms of improvements tangible by the public do we want to accomplish with innovation?
- Further discussed in: Introduction
- Number of flavours: 4

Individual flavours	The objective is met when…
Op.1. Innovation for responsiveness	Better responsiveness to citizen and business needs can be demonstrated as a result of innovation. Responsiveness, in this context, is meant in the dictionary sense of the term, as "*the quality of reacting quickly and positively*"
Op.2. Innovation for inclusiveness	Better inclusiveness of citizens, businesses, CSOs and the academia in the service design process of public institutions can be demonstrated as a result of innovation. Inclusiveness, in this context, is meant in the dictionary sense of the term, as "*the practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized, such as those having physical or intellectual disabilities or belonging to other minority groups*"
Op.3. Innovation for transparency	Better transparency of government[a] decisions (e.g., spending decisions) and processes (e.g., service delivery workflows) to all of society can be demonstrated because of innovation. Transparency, in this context, is meant in the sense of the Open Government Partnership's[b] value of access to information and OGP's conceptualization of transparency in general
Op.4. Innovation for accountability	Better mechanisms for accountability of government work to all of society can be demonstrated as a result of innovation. Accountability, in this context, is meant in the sense of the OGP value of public accountability and OGP's conceptualization of public accountability in general

Source: Developed by the Author.

B.19. The Os ingredient: Societal objectives of innovation

- Guiding question: which objective in terms of societal needs do we want to accomplish with innovation?
- Further discussed in: Introduction
- Number of flavours: 7

Individual flavours	The objective is met when…
Os.1. Innovation for peace	The promotion of living in peace for all of society. Living in peace, in this context, is considered both through peacebuilding and through peacekeeping.
Os.2. Innovation for justice	Better access to justice for all of society.
Os.3. Innovation for safety	Living protected against crime and violence.
Os.4. Innovation for disaster resilience	Making cities and settlements more resilient to natech hazards. Disaster resilience, in this context, is primarily considered through disaster risk reduction
Os.5. Innovation for climate resilience	Making cities and settlements more climate resilient. Climate resilience, in this context, is primarily considered through improved environmental footprint and climate change mitigation and adaptation.
Os.6. Innovation for green technology adoption	Adoption of green technologies by cities and settlements innovation. Green technology adoption, in this context, is meant in the sense of openness to the adoption of environmentally sound technologies at both the city/settlement and business/household/individual level.
Os.7. Innovation for cities deciding openly	Cities are more open to responsive, inclusive, participatory, and representative decision-making as a demonstrated result of innovation.

Source: Developed by the Author.

B.20. The Pa ingredient: Structural patterns

- Guiding question: how do we want to structure our innovation work across relationships between people and values?
- Further discussed in: Chapter 1 Section E
- Number of flavours: 15

Groups of flavours	Individual flavours
Co-creation of innovation	Pa.1 Co-creation under normal conditions
	Pa.2 Humanitarian co-creation
	Pa.3 Multiple-helix co-creation
Incubation of innovation	Pa.4 Internal-facing incubation
	Pa.5 Public-facing incubation
	Pa.6 Joined-up national innovation
Culture of innovation	Pa.7 A culture for accomplishment
	Pa.8 A culture for well-being
	Pa.9 A culture for granting
	Pa.10 A culture for change
	Pa.11 A culture for expanded possibilities
Openness of innovation	Pa.12 Intra-organizational openness
	Pa.13 Inter-organizational openness
	Pa.14 Partial public-facing openness
	Pa.15 Full public-facing openness

Source: Developed by the Author.

B.21. The Pd ingredient: Options for participatory design methods

- Guiding question: which options for participatory design methods do we want to consider for the innovation function of our institution?
- Further discussed in: Chapter 3 Section A
- Number of flavours: 5

Individual flavours	References for specific flavours	Introductory references on participatory design methods
Pd.1. Akvopedia collection	Akvopedia. (n.d.). *Participatory methods*. Available from https://akvopedia.org/wiki/Participatory_methods	- Hensley, J., & Kitch, B. (February 1, 2023). What is Co-design? A Primer on Participatory Design. In Mural Blog. Available from https://www.mural.co/blog/co-design-method. - Sunlight Foundation. (n.d.). Guide to co-design: Learn how to create a participatory design process. In *Sunlight Foundation Roadmap to Informed Communities*. Available from https://communities.sunlightfoundation.com/action/codesign/. - Usability Body of Knowledge. (n.d.). Participatory Design. *In Usability Body of Knowledge/Topics/Methods/Design Methods*. Available from https://www.usabilitybok.org/participatory-design. - MakeTools. (n.d.) *MakeTools - Generative Research for the Front End of Design*. Available from https://maketools.com/.
Pd.2. ACI library	ACI. (n.d.). *Co-design toolkit: Library of co-design resources*. New South Wales Government Agency for Clinical Innovation. Available from https://aci.health.nsw.gov.au/projects/co-design/library-of-related-resources.	
Pd.3. UX Magazine collection	Naranjo-Bock, C. (April 24, 2012). *Creativity-based Research: The Process of Co-Designing with Users*. UX Magazine. Available from https://uxmag.com/articles/creativity-based-research-the-process-of-co-designing-with-users.	
Pd.4. Smallfire collection	Hagen, P. (July 4, 2012). Co-design Workshop Resources: Techniques and Methods. In *Smallfire - Facilitating design: strategy, research & methods to support participation*. Available from https://www.smallfire.co.nz/2012/07/04/co-design-workshop-resources-techniques-and-methods/.	
Pd.5. 18F Methods collection	18F Methods. (n.d.). *18F Methods - A collection of tools to bring human-centered design into your project*. Available from https://methods.18f.gov/.	

Source: Developed by the Author.

B.22. The Pp ingredient: Options for public participation methods

- Guiding question: which options for public participation methods do we want to consider for the innovation function of our institution?
- Further discussed in: Chapter 3 Section A
- Number of flavours: 5

Individual flavours	References for specific flavours	Introductory references on public participation methods
Pp.1. Participedia	Participedia. (n.d.). *Participedia - A global network and crowdsourcing platform for researchers, educators, practitioners, policymakers, activists, and anyone interested in public participation and democratic innovations*. Available from https://participedia.net/.	- OECD. (September 24, 2022). *OECD Guidelines for Citizen Participation Processes*. In series OECD Public Governance Reviews. Available from https://www.oecd.org/publications/oecd-guidelines-for-citizen-participation-processes-f765caf6-en.htm. - Saunders, S. (November 24, 2022). How public engagement improves research and innovation. In *UK Research and Innovation Blog*. Available from https://www.ukri.org/blog/voices-how-public-engagement-improves-research-and-innovation/.
Pp.2. Action Catalogue	Engage2020. (2025). *Action Catalogue*. Available from http://actioncatalogue.eu/.	
Pp.3. Organizing Engagement	Organizing Engagement. (n.d.). *MODELS: Introductions to influential and widely used organizing, engagement, and equity models*. Available from https://organizingengagement.org/models/.	
Pp.4. IAP2 Public	IAP2. (2006). *IAP2's Public Participation Toolbox*. Available from https://icma.org/sites/default/files/	

Individual flavours	References for specific flavours	Introductory references on public participation methods
Participation Toolbox	305431_IAP2%20Public%20Participation%20 Toolbox.pdf.	• EPA. (n.d.). *Public Participation Guide*. Available from https://www.epa.gov/international-cooperation/public-participation-guide-introduction-guide.
Pp.5. IDS collection	IDS. (n.d.). *Participatory Methods: People working together around the world to generate ideas and action for social change*. Available from https://www.participatorymethods.org/methods.	• Fillet, S. (April 3, 2020). Participation methods: how to choose the right one. In *CitizenLab Blog*. Available from https://www.citizenlab.co/blog/civic-engagement/choosing-the-right-participation-method/.

Source: Developed by the Author.

B.23. The Pt ingredient: Innovation process types

- Guiding question: which process type can we best choose for further structuring our innovation work?
- Further discussed in: Chapter 3 Section B
- Number of flavours: 9

Individual flavours
Pt.1. Bottom-up innovation
Pt.2. Collaborative innovation
Pt.3. Continuous innovation
Pt.4. Disruptive innovation
Pt.5. Frugal innovation
Pt.6. Incremental innovation
Pt.7. Local innovation
Pt.8. Open innovation
Pt.9. Sustainable innovation

Source: Developed by the Author.

B.24. The Sp ingredient: Options for serious play methods

- Guiding question: which options for serious play methods do we want to consider for the innovation function of our institution?
- Further discussed in: Chapter 3 Section A
- Number of flavours: 3

Individual flavours	References for specific flavours	Introductory references on serious play
Sp.1. SAP Scenes	SAP AppHaus. (n.d.a). *Scenes: Every great experience starts with a great story*. Available from https://apphaus.sap.com/resource/scenes	• Hartmann Hindrichson, P., & Cattani, A. (2022). Memories of the Future: a design technology by scenarios. *Strategic Design Research Journal 15*(1), 52-65. Available from https://www.revistas.unisinos.br/index.php/sdrj/article/view/21270.
Sp.2. Lego Serious Play	LEGO. (n.d.). *SERIOUS PLAY®*. Available from https://www.lego.com/en-us/themes/serious-play/background	• Seriously Training. (n.d.). *The Association of Master Trainers in the LEGO® SERIOUS PLAY® Method*. Available from https://seriousplay.training/.
Sp.3. Playmobil pro	Playmobil. (n.d.). *PLAYMOBIL pro - modelling kit for professionals*. Available from https://pro.playmobil.com/.	• Pro.Play Method. (n.d.). *play like a pro: Learn to solve complex problems, by playing. Become a Certified Facilitator in the Pro.Play® process and tools*. Available from https://www.proplaymethod.com/.

Source: Developed by the Author.

B.25. The Su ingredient: Suggestions for success

- Guiding question: what suggestions for the success of innovation work are we considering, with respect to priorities and application domains of our innovation planning?
- Further discussed in: Chapter 4 Introduction, Chapter 4 Section A
- Number of flavours: 11

Groups of flavours	Individual flavours
Priorities of innovation planning	Su.1. Prefer to start with public-facing innovation
	Su.2. Prefer to start with building local use cases that can be easily shared
Application domains of innovation planning	Su.3. Cross-fertilize the institutional mandate with innovating for the Good Life Goals
	Su.4. Cross-fertilize the institutional mandate with innovating for the Leaving No One Behind universal value
	Su.5. Cross-fertilize the institutional mandate with innovating for the One Planet One Health approach
	Su.6. Cross-fertilize the institutional mandate with innovating for Our Common Agenda
	Su.7. Cross-fertilize the institutional mandate with innovating for topics of work by the UNSG Envoy on Technology
	Su.8. Innovate for the innovation ecosystem: innovation services procurement and innovative players
	Su.9. Innovate for government-to-employee and government-to-government services
	Su.10. Innovate through multistakeholder dialogues and co-creation of innovation with a public purpose
	Su.11. Explore technology-specific and technology-intensive innovation challenges

Source: Developed by the Author.

B.26. The Td ingredient: Innovation team dynamics

- Guiding question: what are the individual and team dynamics that we need to manage, to help the innovation team deliver successfully?
- Further discussed in: Chapter 3 Section B
- Number of flavours: 10

Individual flavours
Td.1. Contribution laziness
Td.2. Contribution craziness
Td.3. Contribution lossiness
Td.4. Contribution bossiness
Td.5. Contribution messiness
Td.6. Pareto effects
Td.7. Uneven learning curves
Td.8. Fluctuating attention curves
Td.9. An emotional partaking counter-clock
Td.10. From time as foe to time as friend

Source: Developed by the Author.

B.27. The Te ingredient: Technologies for innovating

- Guiding question: which key technology are we taking stock of to innovate?
- Further discussed in: Chapter 1 Section A
- Number of flavours: 19

Individual flavours
Te.1. Artificial intelligence
Te.2. Big data management
Te.3. Blockchain
Te.4. Cryptocurrencies
Te.5. Virtual reality
Te.6. Augmented reality

Individual flavours
Te.7. Autonomous robots
Te.8. 3D printing
Te.9. Internet of things
Te.10. 5G and 6G wireless cellular networks
Te.11. Biotechnology
Te.12. Cloud computing and platforms
Te.13. Application programming interfaces
Te.14. Cybersecurity
Te.15 Mobile applications
Te.16 Geographic Information Systems
Te.17 Digital identity solutions
Te.18 Open data indicatives
Te.19 Robotic process automation

Source: Developed by the Author.