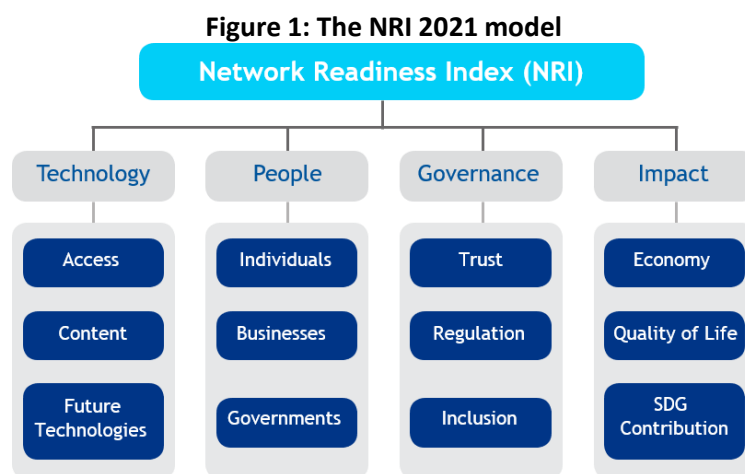


# Network Readiness Index 2021 Lao PDR

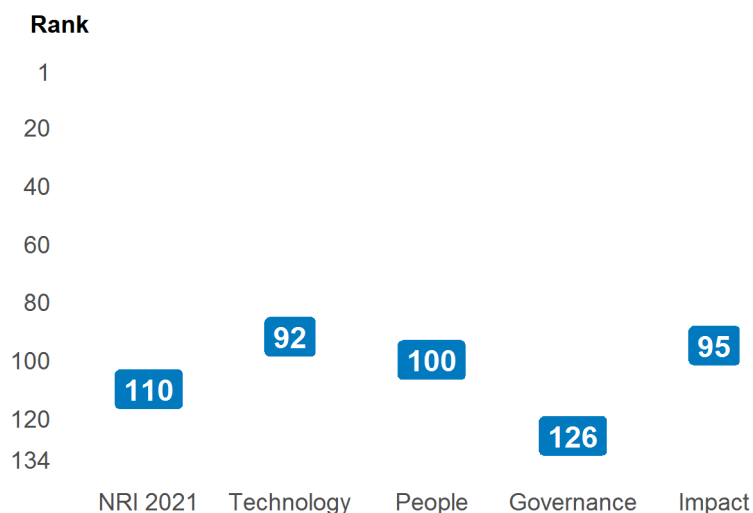
The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2021 the NRI Report maps the network-based readiness landscape of 130 economies based on their performances in four different pillars: Technology, People, Governance, and Impact. Each of these pillars is itself comprised of three sub-pillars (see Figure 1) that have been populated by a total of 60 variables.



## Global NRI position of Laos

Laos ranks 110th out of the 130 economies included in the NRI 2021 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Governance.

**Figure 2: Laos global ranking, overall and by pillar**



### Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Laos relate to Future Technologies, Quality of Life and Governments, among others (Table 1). More could be done, though, to improve the economy's performances in the Trust, Regulation and Inclusion sub-pillars.

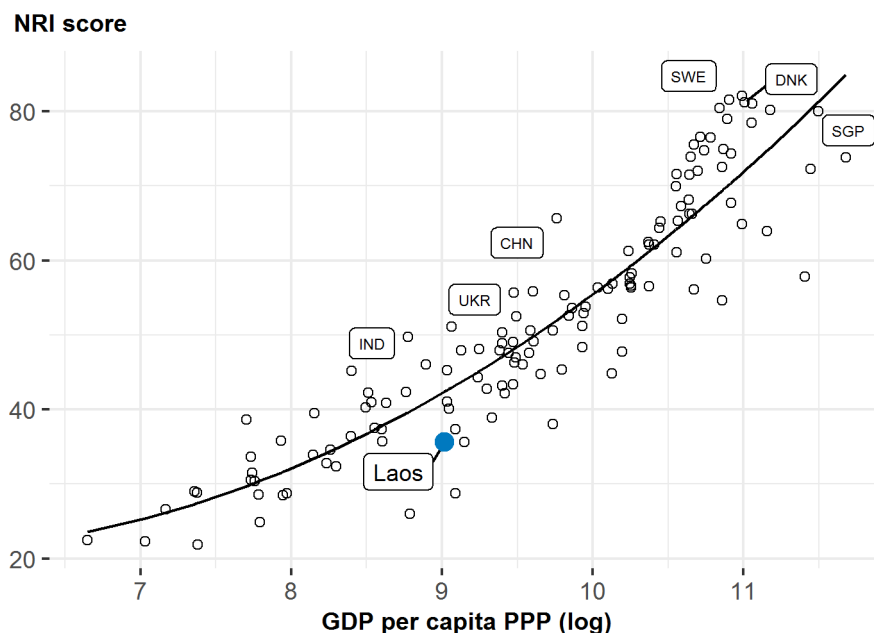
**Table 1: Laos rankings by sub-pillar**

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	33	Economy	106
Quality of Life	77	Access	110
Governments	93	Businesses	117
Individuals	94	Trust	122
SDG Contribution	98	Regulation	122
Content	104	Inclusion	129

### NRI score and income

Figure 3 shows the position of Laos in terms of both NRI score and GDP per capita (PPP). The trend line shows the expected NRI score given an economy's income level. As can be seen, Laos is well below the trend line, which suggests that it is underachieving and that one would expect it could raise its network readiness in view of its income level.

**Figure 3: NRI score and GDP per capita PPP (log)**



Note: NLD = Netherlands (rank: 1), SWE = Sweden (2), DNK = Denmark (3), CHN = China (29), IND = India (67). USA is ranked 4th. Laos belongs to the group of lower-middle-income countries, where the best performer is Ukraine (UKR). The top performer of its region-Asia & Pacific-is Singapore (SGP).

## Performance against its income group and region

### Lower-middle-income countries

Laos is ranked 26th in the group of lower-middle-income countries (Figure 4, left panel). In terms of pillar performance, it has a score higher than the income group average in two of the four pillars: technology and impact. At the sub-pillar level, it outperforms lower-middle-income countries in three of the twelve sub-pillars: Future Technologies, Individuals and Quality of Life.

### Asia & Pacific

Laos is ranked 20th within Asia & Pacific (Figure 4, right panel). It lags behind its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Asia & Pacific in one of the twelve sub-pillars: Future Technologies.

**Figure 4: Performance of Laos against its income group and region, overall and by pillar**



**Table 2: Laos scores vs. averages of its income group and region, overall and by pillar**

Dimension	Laos	Lower-middle-income countries	Asia & Pacific
NRI	35.64	40.00	54.38
Technology	35.68	33.64	50.01
People	35.88	37.84	51.22
Governance	25.42	43.38	58.01
Impact	45.57	45.13	58.28

### Strongest and weakest indicators

The indicators where Laos performs particularly well include 4.2.2 Freedom to make life choices, 4.1.2 High-tech exports, and 4.1.5 Prevalence of gig economy (Table 3). By contrast, the economy's weakest indicators include 2.3.1 Government online services, 1.1.3 Households with internet access, and 3.3.5 Rural gap in use of digital payments.

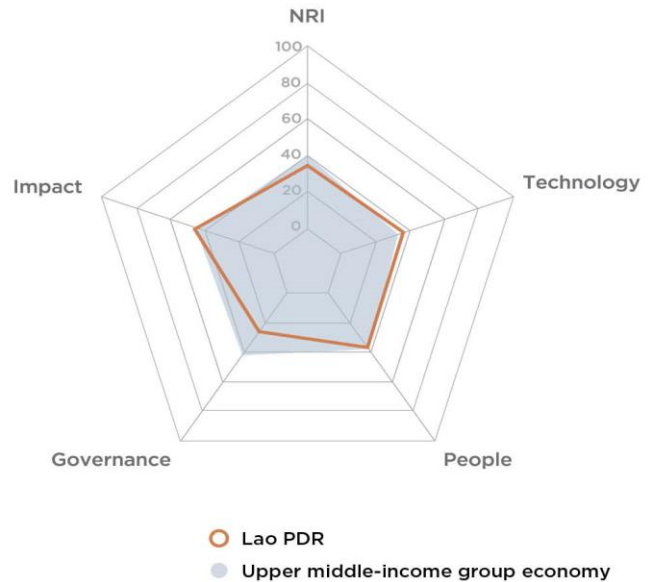
**Table 3: Strongest and weakest indicators of Laos**

<b>Strongest indicators</b>	<b>Rank</b>	<b>Weakest indicators</b>	<b>Rank</b>
4.2.2 Freedom to make life choices	25	4.1.3 PCT patent applications	96
4.1.2 High-tech exports	34	2.2.5 Annual investment in telecommunication services	116
4.1.5 Prevalence of gig economy	42	3.3.5 Rural gap in use of digital payments	119
2.3.3 Government promotion of investment in emerging technologies	44	1.1.3 Households with internet access	126
1.3.2 Investment in emerging technologies	51	2.3.1 Government online services	127
3.2.3 Legal framework's adaptability to emerging technologies	65		
1.3.1 Adoption of emerging technologies	69		
4.2.3 Income inequality	70		
3.3.3 Availability of local online content	73		
1.2.3 Internet domain registrations	78		

# Lao PDR

**Network Readiness Index** Rank (out of 130) **110** Score **35.64**

Pillar/sub-pillar	Rank	Score
<b>A. Technology pillar</b>	<b>92</b>	<b>35.68</b>
1st sub-pillar: Access	110	40.44
2nd sub-pillar: Content	104	21.05
3rd sub-pillar: Future Technologies	33	45.55
<b>B. People pillar</b>	<b>100</b>	<b>35.88</b>
1st sub-pillar: Individuals	94	52.24
2nd sub-pillar: Businesses	117	22.98
3rd sub-pillar: Governments	93	32.43
<b>C. Governance pillar</b>	<b>126</b>	<b>25.42</b>
1st sub-pillar: Trust	122	15.69
2nd sub-pillar: Regulation	122	37.83
3rd sub-pillar: Inclusion	129	22.74
<b>D. Impact pillar</b>	<b>95</b>	<b>45.57</b>
1st sub-pillar: Economy	106	23.69
2nd sub-pillar: Quality of Life	77	63.51
3rd sub-pillar: SDG Contribution	98	49.51



## Network Readiness Index in detail

Indicator	Rank	Score
<b>A. Technology pillar</b>	92	35.68
<b>1st sub-pillar: Access</b>	110	40.44
1.1.1 Mobile tariffs	108	38.55
1.1.2 Handset prices	90	40.22
1.1.3 Households with internet access	126	1.40 ○
1.1.4 SMS sent by population 15-69	115	66.88
1.1.5 Population covered by at least a 3G mobile network	107	94.63
1.1.6 International Internet bandwidth	63	0.94
1.1.7 Internet access in schools	NA	NA
<b>2nd sub-pillar: Content</b>	104	21.05
1.2.1 GitHub commits	119	0.10
1.2.2 Wikipedia edits	92	34.46
1.2.3 Internet domain registrations	*	* ●
1.2.4 Mobile apps development	100	59.34
1.2.5 AI scientific publications	114	9.19
<b>3rd sub-pillar: Future Technologies</b>	33	45.55
1.3.1 Adoption of emerging technologies	69	44.69 ●
1.3.2 Investment in emerging technologies	51	46.40 ●
1.3.3 Robot density	NA	NA
1.3.4 Computer software spending	NA	NA
<b>B. People pillar</b>	100	35.88
<b>1st sub-pillar: Individuals</b>	94	52.24
2.1.1 Active mobile broadband subscriptions	93	70.95
2.1.2 ICT skills	NA	NA
2.1.3 Use of virtual social networks	91	48.13
2.1.4 Tertiary enrollment	100	9.60
2.1.5 Adult literacy rate	73	80.28
<b>2nd sub-pillar: Businesses</b>	117	22.98
2.2.1 Firms with website	98	24.76
2.2.2 GERD financed by business enterprise	NA	NA
2.2.3 Professionals	85	18.50
2.2.4 Technicians and associate professionals	112	10.49
2.2.5 Annual investment in telecommunication services	116	38.15 ○
2.2.6 GERD performed by business enterprise	NA	NA
<b>3rd sub-pillar: Governments</b>	93	32.43
2.3.1 Government online services	127	16.97 ○
2.3.2 Publication and use of open data	NA	NA
2.3.3 Government promotion of investment in emerging tech	44	47.88
2.3.4 R&D expenditure by governments and higher education	NA	NA

Indicator	Rank	Score
<b>C. Governance pillar</b>	126	25.42
<b>1st sub-pillar: Trust</b>	122	15.69
3.1.1 Secure Internet servers	111	31.61
3.1.2 Cybersecurity	115	18.94
3.1.3 Online access to financial account	115	5.12
3.1.4 Internet shopping	81	7.11
<b>2nd sub-pillar: Regulation</b>	122	37.83
3.2.1 Regulatory quality	112	21.70
3.2.2 ICT regulatory environment	127	25.49
3.2.3 Legal framework's adaptability to emerging technologies	65	41.33 ●
3.2.4 E-commerce legislation	76	75.00
3.2.5 Privacy protection by law content	124	25.64
<b>3rd sub-pillar: Inclusion</b>	129	22.74
3.3.1 E-Participation	126	18.52
3.3.2 Socioeconomic gap in use of digital payments	119	4.03
3.3.3 Availability of local online content	73	56.46 ●
3.3.4 Gender gap in Internet use	NA	NA
3.3.5 Rural gap in use of digital payments	119	11.95 ○
<b>D. Impact pillar</b>	95	45.57
<b>1st sub-pillar: Economy</b>	106	23.69
4.1.1 High-tech and medium-high-tech manufacturing	97	3.08
4.1.2 High-tech exports	34	48.71 ●
4.1.3 PCT patent applications	96	0.00 ○
4.1.4 Growth rate of GDP per person engaged	NA	NA
4.1.5 Prevalence of gig economy	42	57.02 ●
4.1.6 ICT services exports	102	9.62
<b>2nd sub-pillar: Quality of Life</b>	77	63.51
4.2.1 Happiness	85	44.92
4.2.2 Freedom to make life choices	25	91.60 ●
4.2.3 Income inequality	70	63.02 ●
4.2.4 Healthy life expectancy at birth	98	54.50
<b>3rd sub-pillar: SDG Contribution</b>	98	49.51
4.3.1 SDG 3: Good Health and Well-Being	106	37.70
4.3.2 SDG 4: Quality Education	NA	NA
4.3.3 Females employed with advanced degrees	92	17.50
4.3.4 SDG 7: Affordable and Clean Energy	89	68.13
4.3.5 SDG 11: Sustainable Cities and Communities	84	74.71

NOTE: \* Indicates confidential data; ● a strength and ○ a weakness.

## Sources

- Berry, B. (2019). berryFunctions: Function Collection Related to Plotting and Hydrology. R package version 1.18.2. URL: <https://CRAN.R-project.org/package=berryFunctions>
- Dutta, S., & Lanvin, B. (eds.) (2019). The Network Readiness Index 2019: Towards a Future-Ready Society. Washington DC: Portulans Institute.
- Dutta, S., & Lanvin, B. (eds.) (2020). The Network Readiness Index 2020: Fostering Digital Transformation in a post-COVID Global Economy. Washington DC: Portulans Institute.
- Dutta, S., & Lanvin, B. (eds.) (2021). The Network Readiness Index 2021: Shaping the Global Recovery. How digital technologies can help make the post-COVID world more equal. Washington DC: Portulans Institute.
- Gohel, D. (2019). officer: Manipulation of Microsoft Word and PowerPoint Documents. R package version 0.3.6. URL: <https://CRAN.R-project.org/package=officer>
- Gohel, D. (2019). flextable: Functions for Tabular Reporting. R package version 0.5.6. URL: <https://CRAN.R-project.org/package=flextable>
- Milton Bache, S. & Wickham, H. (2014). magrittr: A Forward-Pipe Operator for R. R package version 1.5. URL: <https://CRAN.R-project.org/package=magrittr>
- Nakazawa, M. (2019). fmsb: Functions for Medical Statistics Book with some Demographic Data. R package version 0.7.0. URL: <https://CRAN.R-project.org/package=fmsb>
- R Core Team (2018). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL: <https://www.R-project.org/>.
- Slowikowski, K. (2019). ggrepel: Automatically Position Non-Overlapping Text Labels with 'ggplot2'. R package version 0.8.1. URL: <https://CRAN.R-project.org/package=ggrepel>
- Wickham, H. (2007). Reshaping Data with the reshape Package. Journal of Statistical Software, 21(12), 1-20. URL: <http://www.jstatsoft.org/v21/i12/>.
- Wickham, H. (2016). ggplot2: Elegant Graphics for Data Analysis. Springer-Verlag. New York.
- Wickham et al., (2019). Welcome to the tidyverse. Journal of Open Source Software, 4(43), 1686, URL: <https://doi.org/10.21105/joss.01686>