







How can data support business in Nepal?

Insights on data and open data for government, business and the development community

Highlights report

'Research Study into the Demand, Use and Sharing of (Open) Data by Private Sector Business in Nepal'





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Cover image: Nepali business experts, following the Roundtable on Open Data for Businesses hosted by Nepali business association, the National Business Initiative, and the Data for Development in Nepal Program in June 2018. The roundtable was conducted to: improve awareness amongst Nepal's business leaders about the concept of open data and its potential benefits; gain insights into the challenges facing business in using government data; and understand what government datasets are considered to be of high value to the private sector. Photo: National Business Initiative

How can data support business in Nepal?

The impact of data, and particularly of open data, on business in Nepal could be catalytic. Data can be used to create new innovations and business opportunities; improve business efficiencies and performance; and allow fairer competition based on free open market information. But data is not a one-way resource. Data generated by businesses, if shared as open data, also has important value to other actors both inside and outside government.

Until now, little has been known about the data needs of Nepali businesses, and there has been limited evidence to support efforts aimed at unleashing the potential for business to use and share data. A discourse is needed in Nepal among business, government and the development community to harness the potential of open data. This highlight report summarises findings from a study which intends to initiate and inform this discourse with evidence of:

- The current level and nature of **data use** by businesses in Nepal
- Nepali businesses' unmet need for data
- The potential supply of data from businesses in Nepal

In doing so, the study – as summarised in this highlight report – aims to improve understanding, and encourage action and supportive policy towards open data through increased and appropriate government and business data openness.

<u>'Research Study into the Demand, Use and Sharing of (Open) Data by Private Sector Business in Nepal'</u>, conducted by FACTS Research and Analytics, looked at both data and open data, and both government and non-government data. It used an exploratory research methodology, combining both quantitative and qualitative approaches.

"the demand for data must be boosted. This will create awareness and a situation where people can ask for data. This will further promote a data culture in Nepal"

Participant

Overview of findings

- **Data**, particularly government data, is considered to be of high importance by Nepali businesses irrespective of their scale, sector, or type of organisation. However, just half of them actually use government data, citing a range of accessibility and usability challenges that are preventing this.
- **Open data**, by contrast, is a less familiar concept to Nepali businesses. Despite the significant potential economic value documented in research and beginning to be realised in other countries, the availability of open data to Nepal's businesses, their use of open data and their sharing of open data has been very limited. Many business actors, however, expressed keen interest in the concept of open data and in collaborating with efforts to promote the further sharing and use of data.

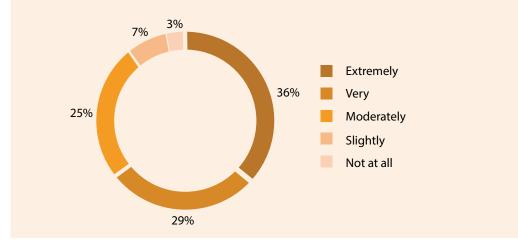
Figure 1: Nearly 4 in 10 businesses do not use data as part of their organisational optimisation processes.



How businesses in Nepal are using data

- 1. While businesses in Nepal are using data for a wide range of purposes, there are still many businesses who are not using data in their decisions and operations.
- 2. Nepali businesses use data from a **multitude of sources**, including self-generated data, government data and media among others.
- 3. Businesses in Nepal reported **mixed levels of confidence in their capacity to use data effectively to drive business decisions**.
- 4. There is **low familiarity with and use of open data** but there are emerging examples of initiatives that are building their business models around the use and provision of open data.





The unmet demand for data amongst businesses in Nepal

- 1. There is a high level of demand from across business sectors in Nepal for data from government and a strong belief that greater access to government data would benefit business.
- 2. Data on a **diverse array of topics** is required, from both government and other sources, to enable Nepal's businesses to build economic value.
- 3. Nepal's businesses have a **range of practices and preferences** for accessing government data, but the majority prefer online access.
- 4. There are **many barriers** to the effective use of government data by Nepal's businesses, with the major challenge being finding relevant data.
- 5. Despite the lack of familiarity with the term 'open data', when using data, Nepal's businesses have a **preference for machine-readable formats**.

⁴⁴if the government makes open format data easily accessible, it will benefit businesses by creating a better business environment

and enabling existing businesses to grow $^{\prime\prime}$

Participant

Figure 3: The major challenge cited by businesses as a barrier to sharing data was concern about privacy. This was cited by 67% of the businesses.

The potential supply of data by businesses in Nepal

- 1. Businesses in Nepal are not always aware they produce a wide range of data.
- 2. Data produced by Nepal's businesses is often shared externally, both formally and informally, but rarely in open format.
- 3. There are many perceived barriers to data sharing, although businesses are supportive of the idea of open data.

⁴⁴one of the major problems for us to share data is that there are no clear laws that guide data sharing, and so there will be a high

chance of data manipulation "

Participant

Key recommendations

Interventions are required to release the value of open data in Nepal. These will require interlinked efforts by business, government and the development community, including:

- growing demand for data by Nepal's businesses;
- improving the accessibility and usability of government data required by Nepal's businesses;
- **building skills among businesses** to use data in their business decisions, processes and innovations;
- growing the will and feasibility of businesses to share their non-confidential data.

The potential impact of open data in Nepal

Open data can facilitate development

In line with what has been seen internationally, open data as a facilitator of development has become increasingly discussed, adopted and promoted by a growing community of actors in Nepal. Over the past five years, these actors have worked to progress the open government agenda and support the sharing of an increasing number of open datasets. From the perspective of these actors, the potential benefits of open data are wide ranging but are broadly seen to include improvements in: the efficiency and quality of public services; innovation and economic value; transparency, accountability and public participation. This latter area has been the driving force for many of Nepal's open data by the federal government² and civil society³, little attention has so far been paid by Nepal's private sector on the benefits that open data could hold for them.

Open data can support businesses to innovate, create jobs and build economic value

Macroeconomic studies have cited huge figures when calculating the economic impact of open data, estimating it contributing between 0.4% to 4.1% of an economy's GDP – and in many middle and high-income countries, business is already effectively harnessing open data to deliver this value.⁵ Many factors are considered when calculating the impact of open data. Research typically cites that open data can be used to: create new innovations and business opportunities; improve the marketing of products and services; and, allow fairer competition based on free open market information.⁶ Open data can also: yield savings from enhancing efficiencies and optimising existing operations; improve levels of corporate governance, transparency and trust; and, support greater consumer empowerment. In an increasingly integrated and competitive global economy, open data further helps create a favourable environment for domestic and foreign investment. Moreover, data generated by businesses, if shared as open data following data protection rules, has important value to other actors both inside and outside of government.

The impact of open data in low-income countries like Nepal could be catalytic

Nepal's private sector is formed of small, medium and large businesses operating, across a range of manufacturing, retail and service sectors, within a complex and often opaque business environment that is mired in information asymmetries. In addition to the benefits cited earlier, open data has the potential to level the business playing field in terms of access to high-value data and the opportunity to use it. In the past few years the Nepali federal government has made some notable efforts to open up data relevant to business including data on government procurement and company registrations, however, currently, little is known about whether and how this data is being used by businesses and what further data is required by business to strengthen Nepal's economy.

A discourse is needed among business, government and the development community to unleash the potential impact of open data in Nepal

Collaborative interventions - Involving business, government and the development community - are



Business innovators brainstorming the benefits of open data at the "Open Street Maps for Business Workshop" hosted by Kathmandu Living Labs and the Data for Development in Nepal Program. The workshop introduced participants to Open Street Maps as a practical open data tool for enhancing their operational efficiency. Photo: Pranaya Sthapit

needed to encourage action and supportive policy towards the appropriate publication of high-value open data, in a way that meets needs while protecting individual privacy, commercial confidentiality and national security. However, until now, there has been limited evidence on data needs and practices to guide such interventions. 'Research Study into the Demand, Use and Sharing of (Open) Data by Private Sector Business in Nepal' was conducted to address this evidence gap. Looking at both data and open data, and both government and non-government data, the study used an exploratory research methodology that combined: a literature review; a survey of senior business executives of 135 small, medium and large businesses across a broad range of sectors in Nepal's main industrial hubs;⁹ and key participant interviews and focus group discussions with 39 business executives and private sector experts. The research, conducted by FACTS Research and Analytics, was loosely based on the Open Data for Business Tool developed by the Center for Open Data Enterprise.¹⁰ To access the full study please visit: <u>http://www.</u> d4dnepal.org/wp-content/uploads/2019/06/Full-Report_the-Demand-Use-and-Sharing-of-Open-Data-by-the-Private-Business-Sector-in-Nepal FACTS-D4D.pdf The following sections summarise the findings.¹¹

How businesses in Nepal are using data

- 1. While businesses in Nepal are using data for a wide range of purposes, many businesses are still not using data in their decisions and operations.
- Participants reported that, in general, market research by businesses is rare and that decisions are
 primarily informed by instinct. One participant shared that, "*if a business wants to develop a product for
 a restaurant, ideally they determine the price by looking at data on the market and how much people can
 afford. But in reality, most businesses use only observation*". Where market research does take place,
 however, the survey showed that 90% of businesses use data in the process.
- Data is widely used in the process of identifying customers, when pricing products and in product development. For example, 87% of businesses reported using data in the process of identifying customers, with one executive explaining, "we use data related to business registration, types of companies, ownership and levels of investment – all such information helps us to approach new business customers".
 - However, the survey revealed that data is not used by all businesses who conduct these processes: 4 in 10 businesses do not use data as part of their organisational optimisation processes. Participants explained that this is because businesses firstly do not always realise that they produce data and secondly do not understand the value of this data to their business decisions.
- Despite this, almost all businesses classed themselves as supportive of the idea of basing business decisions on data.
- 2. The data used by Nepal's businesses comes from a multitude of sources, including self-generated data, government data and media among others.
- The majority of data used by businesses is generated internally. 68% of businesses reported this to be the case. One participant shared that "we mostly use our data on sales and income each year. This helps us analyse trends and how we should move ahead".
- Of the businesses surveyed, 56% use data from government sources. Although data from the media and from other private sector sources are also popular, being used by 51% and 48% of businesses respectively.

- Of the businesses that use data from the government, the vast majority (84%) use national level data from the federal agencies, whereas only around half use subnational data from the provincial and local governments.
- The most commonly used government data was from the Ministry of Industry, Commerce and Supplies. This was followed by data from the Ministries of Communication and Information Technology; Agriculture, Land Management and Cooperatives; Labour Employment and Social; and the Ministry of Finance.
- The most commonly used data from constitutional bodies and agencies comes from the Federation of Nepalese Chambers of Commerce and Industry; the Central Bureau of Statistics and the Office of Company Registrar.
- Approximately 3 in 10 businesses use data from academic and research sources, meaning that 70% of businesses do not use data from these sources.

3. Businesses in Nepal reported mixed levels of confidence in their capacity to use data effectively to drive business decisions.

- In general, a low level of digital and data literacy among large portions of the population was seen as limiting the effective use of data. Participants broadly concurred that, on the whole, small businesses have more limited data use skills, whereas larger-scale and IT sector businesses have better technical infrastructure and are more capable of using data confidently.
- Interestingly, the survey contradicted this impression, with 6 in 10 businesses rating themselves as "fairly confident" in their skills and capacities to effectively use data to inform decisions. 2 in 10 rated themselves as "very confident". The remaining 20% were less confident the majority of which were small and medium-scale businesses.

4. There is low familiarity with and use of open data – but there are emerging examples of initiatives that are building their business models around the use and provision of open data.

- From interviews it was clear that there is a lack of clarity around the term 'open data'. There was a general belief that data made available to the public was open data, regardless of the format used.
- Despite this, the vast majority of businesses reported that less than 10% of the data that they use from external sources was open data.
- Business models driven by open data as seen in many middle and high-income contexts

 are still rare in Nepal, however there are examples of organisations who are setting themselves up as data intermediaries by making data easier to find, access and understand. These groups are often working alongside federal, provincial and local governments to grow the value of their data. Many currently provide data to support development actors in their decisions and accountability efforts, rather than for use by business, and rely heavily on funding from donors to supplement the income earned from their commercial services. This includes groups such as Bikas Udhyami, who provide access to data alongside analysis and visualisation of that data; Digital Data System for Development, who combine satellite data with government data to inform the agricultural decisions; and, who build automated tools to collect, curate, share and analyse data for clients.

The unmet demand for data amongst businesses in Nepal

- 1. There is a high level of demand from across business sectors in Nepal for data from government and a strong belief that greater access to government data would benefit business.
 - Two-thirds of businesses stated that government data was either "very" or "extremely important" to their work. Just 5% thought that government data is of no importance to them. Moreover, two-thirds of businesses also thought that greater accessibility of government data would be beneficial to them.
 - Businesses believe that better access to government data could help them perform a range of processes better. These include: identifying new customers (reported by 68% of businesses), researching markets (61%), developing new products and services (59%), and making pricing decisions (49%). Participants also shared that the current limitations in access to government data impacted businesses' ability to scale, effectively budget, forecast and segment markets.
 - While there is a high level of demand, the articulation and awareness of this demand by businesses is low. One participant shared that, "the demand for data must be boosted. This will create awareness and a situation where people can ask for data. This will further promote a data culture in Nepal".
 - There was a particularly high level of demand for real-time and up-to-date data, and also a high level of demand for data from non-government sources. One participant explained that, "one particular need we have is data to help our hiring. Up-to-date data on how many engineering colleges and graduates there are, and the quality of their courses would definitely help our decisions on whom we are going to approach".

2. Data on a diverse array of topics is required, from both government and other sources, to enable Nepal's businesses to build economic value.

- **Participants shared their need for a wide range of data**, including on business and property registrations, geospatial data, commodity prices, taxes and tariffs, government budgets and procurement, employment, census and demographic data, and economic conditions.
- Survey results show that data of highest value to business includes that related to customers (reported by 59% of businesses), revenue and sales (54%), business opportunities (44%), market developments (43%) and government regulations/processes (35%).

- Government data of greatest interest for business included that which related to business, consumers, manufacturing, agriculture, tourism, law, economy, finance, and demographic data. There was a strong demand for data that could be consolidated across agencies, as currently most datasets are not interoperable.
- Participants also revealed that government data on processes such as business registration protocols, guidelines for taxes, information on contractual enforcement processes as well as details of federal, provincial and local government plans and policies were of great interest.
- The business sector in which an individual was operating was a primary driver of data needs. Specific data needs highlighted by participants operating in the agriculture sector included data on import and export of grains, government agricultural allowances, poultry supplies, pesticide use, and import of veterinary medicines etc.; whereas, participants in the manufacturing sectors expressed a need for data on demographics, average earnings and spending capacity, and customs related data on imports and taxation rates.

3. Nepal's businesses have a range of practices and preferences for accessing government data, but the majority prefer online access.

- Participants explained that it is very common for businesses to rely on personal connections, such as family, friends and professional contacts to gain access to government data. A third of businesses in the survey confirmed they use this route, although the survey findings showed that this was not the primary channel for obtaining government data.
- Around 6 in 10 businesses currently access government data mainly from government websites and via internet searches. Half of businesses stated that they obtain government data via social media, while 4 in 10 businesses stated that they obtain data from newspapers. Fewer than 1 in 10 businesses stated that they obtain government data through the use of professional services such as consultants or external analysts, although 2 in 10 businesses did report obtaining government data from websites belonging to civil society, academia, research houses and international nongovernmental organisations.
- There was a strong preference by business for accessing government data online via portals and mobile apps – with around 6 in 10 businesses reporting this as a preferred method. Many businesses also wanted to access data by sending email requests or completing an online form – with around half of the businesses reporting this as a preferred method. The least preferred methods of gaining access to government data included the filing of Right to Information requests, having individual formal meetings or sending formal written letters.

4. There are many barriers to the effective use of government data by Nepal's businesses, with the major challenge being finding relevant data.

- The major challenge cited by businesses as a barrier to the use of government data was the difficulty in finding relevant data. This issue was cited by 64% of businesses.
- Participants also shared that a lack of systematic processes within government for sharing data creates confusion for them. Conversely, literature points to the limited public awareness of data generated and provided by the government, and of people's right to information.

- Half of businesses find that available government data is out of date. One participant shared that, "government websites are never updated. Their websites will have data that is four years old but which they will highlight as new".
- Businesses also stated that there is a lack of relevant data and that data is difficult to access due to restrictions or bureaucratic hurdles. The former was reported by 38% of businesses, and the latter by 34%. One participant shared that, "there is no easy access to government data. In Kathmandu we can visit the ministries for the data we require, but for organisations located in the far west, they cannot get the data". Another shared that, "even for simple data we have to write a letter and register our name to get the data from the concerned authority. There are a lot of processes involved in getting signatures from officials to enable us to get the data". Local experts highlight the widespread culture of secrecy within the government bureaucracy as preventing equal access to high-value data and information.
- Alongside the lack of technical skills to use data, participants commonly cited the lack of disaggregated data and standardised data as a challenge in using government data.
- **Participants also regularly stated concerns that data is inaccurate, unreliable or manipulated.** One participant shared that, "one bad tradition in Nepal is that, for marketing purposes, data is often exaggerated, but for government purposes they provide data with decreased performance".
- Literature points to numerous technical reasons that hinder data-sharing by government. These include the lack of digitised systems within government, lack of technical skills within government to open up their data, and lack of adequate internet infrastructure in large parts of the country – where radio and community signboards are the most common channels for disseminating information.

5. Despite the lack of familiarity with the term 'open data', when using data, Nepal's businesses have a preference for machine-readable formats.

- Despite a lack of clarity around the term 'open data', when asked for their most preferred formats for receiving data, 6 in 10 businesses ranked spreadsheets such as Excel or CSV, as the most desirable format. (As stated earlier, in general, participants considered 'open data' to be data that is shared and accessible publicly, irrespective of the format of the data).
- Other popular formats were internet webpages, with 4 in 10 businesses ranking this as their preferred choice, and Word format, which was ranked as preferable by 3 in 10 businesses.
- There were calls from several participants for a centralised portal where government data could be accessed online.
- The least preferred format was hard copy, although significantly this was still the preferred format for almost a quarter of businesses.
- Several participants noted that government agencies were not considering the users' needs when sharing their information, and that when information was provided it was highly aggregated. One respondent stated that, "if the government makes open format data easily accessible, it will benefit businesses by creating a better business environment and enabling existing businesses to grow". Another shared that, "the government should provide data in machine-readable formats rather than PDF. If the data were made available in Excel or Word format, we could use software to understand them".

The potential supply of data from business in Nepal

1. Businesses in Nepal produce a wide range of data but are not always aware that they do so.

- Two-thirds of businesses surveyed stated that they produce data, while the remainder stated that they did not produce data themselves or did not know if they did. One participant noted, "businesses might say that we don't produce data, but we forgot to realise that the daily billing that happens is data. If we looked back at historical billing, we would be able to determine what our consumers' spending behaviours are".
- The data produced by businesses includes data related to: consumers (69% of businesses reported producing this), specific business sectors (66%), revenue and sales (57% of businesses) and employees (44% of businesses).

2. Data produced by Nepal's businesses is often shared externally, both formally and informally, but rarely in open format.

- Three-quarters of businesses share data with the government, and over half share data with business associations. Around 40% of businesses share data with civil society, research groups and other businesses.
- Sharing data among closed groups is also common. One respondent stated that, "I have a group of friends who work in the hospitality sector. We tend to meet and share data related to our organisations on topics related to the hospitality business".
- Despite this, among the businesses surveyed, only 18% rated themselves as willing to share data publicly. 36% were somewhat willing and 21% of businesses were not willing to share data publicly.
- Respondents were most willing to publicly share data related to market shares, business opportunities, consumers, revenues and sales, and employees.
- The majority of businesses reported that less than 10% of the data they shared is made available in open format.

3. There are many perceived barriers to data sharing, although Nepali businesses are supportive of the idea of open data.

- Businesses cited a range of barriers to publicly sharing their data. However, interestingly, around a quarter of businesses also cited that they had a lack of data to share.
- The major challenge cited by businesses as a barrier for sharing data was concern about privacy. This was cited by 67% of businesses.
- In addition, businesses face concerns about competitive advantage. This was cited by 37% of businesses. One participant stated that, "businesses working for profit are less likely to share data as they would be helping their competitors".
- The unclear legal framework and concerns about losing intellectual property were also cited as important barriers to sharing data. One participant stated that, "one of the major problems for us to share data is that there are no clear laws that guide data sharing, and so there will be a high chance of data manipulation". Another stated, "there are no specific policies and laws for data sharing and there is a lack of a credit giving culture".
- Other challenges cited were a perceived lack of external interest in their data, technical challenges to sharing the data, and concerns about their data quality. Indeed, one business shared that they had never been approached for their data.
- Despite all of this, businesses were found to be very interested in supporting the growth of open data in Nepal: three-quarters of businesses were "extremely" or "very supportive" of the idea of sharing data in open format, while only 3% were not at all supportive of the idea. Participants from business associations also expressed strong interest in supporting the sharing of open data by business.

Recommendations

In order to release the value of open data for Nepal's business a series of interlinked efforts are required by business, government and the development community.

Growing demand for data amongst Nepal's businesses

Nepal's businesses need to be supported in articulating their needs to suppliers of data and collaboratively advocating for open data, potentially via business associations. These interventions will involve, firstly, helping businesses to develop a more detailed understanding of the benefits of greater access to and use of data from government, academia, civil society and other private sector groups. This understanding could be enhanced by further, more in-depth, research into the data needs and motives of businesses operating in specific sectors, as well as the tangible benefits which data can bring to Nepal's businesses.

Improving the accessibility and usability of government data

Nepal's federal, provincial and local governments need to be supported to better understand the potential value that their non-confidential data has for business and for economic growth if it is shared in open formats. The findings from this study can help Nepal's governments to determine which of their data is of high value to business, identify how businesses want to access their data, and understand the barriers faced by businesses in using government data. However, further evidence and support will be needed to improve the accessibility and usability of government data.

Business associations, development partners and businesses specialising as data intermediaries could play an important role in supporting Nepal's governments to establish concrete steps to improve accessibility and usability. These steps could include, for example: adding additional fields into data released by the Office of Company Registrar; developing user-friendly interfaces to support the use of government procurement data; using open data formats for releases of economic, trade and taxation data; sharing historic records of real-time government datasets such as vegetable pricing etc. Governments will also need to be supported, by business and the development community, in the development of appropriate policies around data sharing and security, protection of intellectual property, and enforcement of licensing and copyrights to ensure appropriate data governance and protections are in place to support the enabling environment for open data.

Building skills among businesses to use data in their decisions, processes and innovations

Nepal's businesses need to be supported in developing greater technical capabilities to use data, and in improving their awareness of where to access data. Targeted data literacy trainings, guidance documents, mentoring and peer learning could play a key role in this, as well as government-run data-challenges as seen in other countries. There is also significant scope for the development of commercial value-added data services, such as market analytics firms, to link businesses with specialist analysis. In addition to this, efforts will also be required to help businesses understand the value of investing in their own data production, in incorporating these costs into their operations and to build their skills in sharing this data.

Growing the will and feasibility of businesses to share their nonconfidential data

Data from business has significant potential to support decision-making, implementation and monitoring by governments and other actors, as well as build trust and empower consumers; therefore, business and governments should work together to address the range of barriers preventing businesses from sharing their data. The development community could play an important role in promoting this dialogue and supporting interventions to address challenges.

In particular, efforts will be required to help businesses understand the value of their own data and improve their confidence in sharing certain datasets without fear of negative repercussion. To avoid concerns around privacy and competitive advantage, for example, businesses could be encouraged to share data via data collaboratives – where participants from different sectors, including business, research institutions, and government agencies, exchange data within trusted groups to solve public problems. Business associations could play an important role in facilitating exchange of data between their members, and the analysis of data between members and external actors, such as government and the development community.

Notes

¹ Open data is data that can be freely used, shared and built on by anyone, anywhere, for any purpose. To be 'open data', data must be technically open (e.g. available in machine-readable formats) and legally open (e.g. with a licence that allows free use).

² For example, in August 2017 a national action plan on open government data was accepted by the Prime Minister's office.

³ Many of whom interact as part of the Open Nepal community, http://opennepal.net (accessed 16 April 2019).

⁴ For example, a 2013 paper by McKinsey Global Institute estimated that open data could unlock US\$3–5 trillion in economic value, and a 2014 report commissioned by the Omidyar Network estimated the opportunity at \$13 trillion over the following five-year period. A helpful summary of macroeconomic studies is provided in a blog published by Medium. Available at: McKinsey Global Institute, 2013. Open data: Unlocking innovation and performance with liquid information. Available at: https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/open-data-unlocking-innovation-and-performance-with-liquid-information; Omidyar Network, 2014. Open for Business: How Open Data Can Help Achieve the G20 Growth Target. Available at: http://www.omidyar.com/sites/default/files/file_archive/insights/ON%20 Report_061114_FNL.pdf; ODIHQ, The economic impact of open data: what do we already know? Medium, [web blog], 2 November 2015, https://medium.com/@ODIHQ/the-economic-impact-of-open-data-what-do-we-already-know-1a119c1958a0 (accessed 16 April 2019).

⁵ The Open Data 500 details businesses that are currently building economic value from Open Data, http:// www.opendata500.com/us/list/ (accessed 16 April 2019).

⁶ For example, information on this is provided by the Open Data Institute and the World Bank. Available at: Open Data Institute, 2015. Open data means business: UK innovation across sectors and regions. Available at: http://theodi.org/open-data-means-business-uk-innovation-sectors-regions; World Bank, 2015. Open Data for Business (OD4B) Tool. Available at: http://opendatatoolkit.worldbank.org/docs/odra/od4b_v2.8-en.pdf

⁷ Data on contracting from the Public Procurement Monitoring Office is due to be opened as part of the Public Procurement Transparency Initiative in Nepal. More information available here: https://medium.com/ open-nepal/open-contracting-paving-the-way-for-open-government-in-nepal-2da8f1971b3 (accessed 30 April 2019).

⁸ Basic data from the Office of the Company Registrar is available here:http://www.ocr.gov.np/index.php/en/ data/o-g-d (accessed 30 April 2019). ⁹ The study took place in the ten districts of Nepal with the highest number of business registrations, namely Kathmandu, Lalitpur, Bhaktapur, Kavre, Makwanpur, Chitwan, Parsa, Baram, Kaski, and Rupandehi.

¹⁰ Center for Open Data Enterprise, 2015. Open Data for Business (OD4B) Tool Version 2.8. Available at: http://opendatatoolkit.worldbank.org/docs/odra/od4b_v2.8-en.pdf (accessed 30 April 2019).

¹¹ The study found that businesses did not have a consistent understanding of the differentiation between data and information, or between data and open data, which should be taken into consideration when reviewing the findings.

¹² The Government of Nepal's Right to Information Act (2007) recognises the right of citizens to seek and receive information on matters of their interest or of public interest, unless secrecy of information should be protected by law.

¹³ Asia Foundation, 2014. Citizen's Access to Information in South Asia, Available at: https://asiafoundation. org/resources/pdfs/CitizensAccesstoInformationinSouthAsia.pdf

¹⁴ Development Initiatives, 2017. Nepal's emerging data revolution. Available at: http://devinit.org/post/ insights-into-nepals-emerging-data-revolution/

¹⁵ For example, the Open Data Challenge Series run in the UK by Nesta, http://www.nesta.org.uk/open-datachallenge-series (accessed 16 April 2019).

¹⁶ More information can be found on the data collaboratives website, http://datacollaboratives.org/ (accessed 16 April 2019).

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Contact

Louisa Dennison, Program Manager louisa.dennison@devinit.org

Tirza Theunissen, Program Manager tirza.theunissen@asiafoundation.org

Pramit Dabadi, Focal Person from FACTS pramit@factsnepal.com

Visit d4dnepal.org devinit.org asiafoundation.org www.factsnepal.com

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