Philippines

A. Medium-term economic outlook (forecast, 2018-23 average)
GDP growth (percentage change): 6.6
Current account balance (% of GDP): -0.1
Fiscal balance (% of GDP) (central government): -2.3

B. Medium-term plan
Period: 2017-22
Theme: Aims to lay a stronger foundation for inclusive growth, a high-trust society, and a globally competitive economy toward realising AmBisyon Natin by 2040

C. Basic data (in 2017)
Total population: 101.0 million (in 2015)*
Population of Metro Manila (NCR): 12.9 million (in 2015)*
Nominal GDP (US dollar): 12.9 million (in 2015)*
Nominal GDP (US dollar): 313.6 billion**
GDP per capita at PPP: 8,360.4 (current International Dollar)**
Exchange rate in the first half of 2018 (period average): 52.0 (PHP/USD)

Note: * Population data are year-end government estimates based on 2015 Census.
** IMF estimate.
Sources: OECD Development Centre, national sources, CEIC and IMF.

Composition of exports, 2017
(percentage of total exports)

Composition of imports, 2017
(percentage of total imports)

Structural policy challenges discussed in previous editions of the Outlook

<table>
<thead>
<tr>
<th>Year</th>
<th>Infrastructure</th>
<th>Education</th>
<th>Taxation</th>
<th>Job creation</th>
<th>Education</th>
<th>Job creation</th>
<th>Disaster-risk management</th>
<th>Develop Mindanao</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td>Increasing funding for infrastructure development and attracting more private participation</td>
<td>Improving the access to, and the quality of, basic education, and strengthening technical education and vocational training</td>
<td>Reforming the tax system by enhancing tax collection and widening the tax base</td>
<td>Improving road transportation and power and energy infrastructure, and strengthening public and private investment</td>
<td>Focusing sharply on job-creation strategies</td>
<td>Improving access to quality education and training by strengthening the K+12 programme</td>
<td>Building holistic disaster-risk reduction and management capacities to reduce vulnerability to natural hazards</td>
<td>Improving agricultural productivity and transport infrastructure in Mindanao</td>
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<tr>
<td>2013</td>
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</tbody>
</table>
Structural policy challenges discussed in previous editions of the Outlook (cont.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Job creation</th>
<th>Infrastructure</th>
<th>Disaster-risk management</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Sustaining economic growth by stepping up the country’s global competitiveness through quality employment</td>
<td>Striving to put in place a responsive, development-oriented, and inclusive financial system to serve as a platform for efficient management and the mobilisation of resources</td>
<td>Further improving social development to make sure all Filipinos benefit from equal opportunities when it comes to having a decent job, acquiring assets, and enjoying higher living standards</td>
</tr>
<tr>
<td>2016</td>
<td>Encouraging faster job creation</td>
<td>Strengthening infrastructure and the transport sector</td>
<td>Improving disaster-risk management</td>
</tr>
<tr>
<td>2017</td>
<td>Investing in infrastructure improvements</td>
<td>Targeting faster growth in the services sector to create new jobs</td>
<td>Eliminating hurdles in a bid to attract more FDI</td>
</tr>
<tr>
<td>2018</td>
<td>Optimising infrastructure financing</td>
<td></td>
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</tr>
</tbody>
</table>

Recent developments in policy areas covered by previous editions of the Outlook

Job creation
- In August 2018, a bill that strengthens enforcement of occupational safety and health hazard standards was passed into law. The bill, which updated the labour engagement standards and the penalty scheme for violations, was initially filed in 2004.
- In May 2018, Executive Order 51 was signed to prohibit certain contracting and subcontracting practices. These include hiring employees for only 5 months and then replacing them with another batch for five months to circumvent rules on labour regularisation, labour-only contracting wherein a contractor or subcontractor recruits and supplies workers for a principal to perform duties that are directly related to the primary business of the principal.

Infrastructure
- In August 2018, the Asian Development Bank (ADB) approved a USD 300 million loan to the Philippines, in order to enhance the country’s framework of public-private partnership arrangements. ADB noted that the Build, Build, Build programme is estimated to require a total USD 168 billion in investments for 75 high-impact priority projects nationwide.

Disaster-risk management
- In August 2007, the government launched a catastrophe risk insurance programme with the help of the International Bank for Reconstruction and Development (IBRD) and the UK Department for International Development. The coverage amounted to USD 206 million for 25 participating provinces. Claims are triggered when certain conditions are met while risk is transferred from the government public insurance company to a panel of international insurers through IBRD.
- In a statement from July 2018, the Department of Interior and Local Government backed the transformation of the National Disaster Risk Reduction Management Council, which is currently under the Department of National Defense, into a full fledged executive department. This is in line with the President’s message in his third State of the Nation Address that called for the passage of a law creating a Department of Disaster Management. Legislative bills pushing for such proposal had already been filed in both houses of Congress in mid-2017.
- In October 2018, the House of Representatives approved the bill creating the Department of Disaster Resilience bill on final reading. The bill gives the new
department the power to oversee and co-ordinate ex-ante and ex-post disaster-related measures, evaluate disaster and climate resilience initiatives and lead the development of adaptation and mitigation strategies. Counterpart bills are pending in the Senate for deliberations.

Competitiveness

- In August 2018, the Department of Trade and Industry launched the Project One initiative which aims to provide prospective investors with a portal to access the complete list of requirements and the process of doing business with local government units. The initiative is in line with the Ease of Doing Business and Efficient Government Service Delivery Act of 2018 and was announced on the occasion of the 6th Regional Competitiveness Summit.

- In August 2018, the Senate leadership revealed its aim of passing the bill on 14th month pay before the end of 2018. The bill, which was filed in June 2016, will mandate companies that fit the stipulated criteria to pay additional 2 months-worth of salary to their employees every year. In December 1975, the 13th month pay was instituted by virtue of a Presidential Decree.

- In August 2018, the Philippine Identification System Act was signed into law. The Law provides a legal basis for the national identification (ID) system, allowing Filipinos to avail of government and private sector services using a single ID card. The Philippine Statistics Authority is tasked to oversee the system to be supported by the Department of Information and Communications Technology. An inter-agency PhilSys Policy and Coordination Council was created to craft the policies and guidelines.

Financial system

- In April 2017, the central banks of Philippines and Thailand signed a letter of intent to pursue a cross-border banking arrangement in line with the ASEAN banking integration framework (ABIF). ABIF was endorsed by the central banks in December 2014 and was contained in the 6th Package of Commitments on Financial Services implementation protocol under the ASEAN Framework Agreement on Services signed in March 2015.

- In June 2018, the International Financial Corporation (IFC) under the World Bank floated the first multilateral agency-backed Philippine peso-denominated green bond. The debt paper called Mabuhay bond had a tenor of 15 years and raised about USD 90 million in capital, which IFC intends to invest in the optimisation programme of the privately owned Energy Development Corporation.

- In July 2018, BSP has approved business operations of two new cryptocurrency exchanges, increasing the number of exchanges in the country to five. Prior to the BSP decision, Cagayan Economic Zone Authority conveyed that it is also in the process of giving licenses to a number of cryptocurrency-oriented businesses, e.g. exchanges, mining and ICO. In February 2017, BSP published Circular No. 944 that set the guidelines for virtual currency exchanges.

- In September 2018, BSP signed a memorandum instructing financial institutions authorised to offer electronic financial and payment services to make fund transfers via PESO.Net and/or InstaPay available through its e-channels by 30 November 2018. PESO.Net and InstaPay are initiatives under the National Retail Payment System, which seeks to reduce cash-based transactions and raise electronic retail payments as a share of total retail payments from 1% in 2013 to 20% by 2020.
Regional development

- In July 2018, the Bangsamoro Organic Law was signed into law. The legislation could potentially expand the area of the current Autonomous Region of Muslim Mindanao, subject to plebiscite and opt-in petition results. The region will also get an increase in national government transfers through higher share in internal revenue allotment (i.e. from 70% to 75%) and an annual unconditional block grant amounting to 5% of national revenue.

Education

- In March 2018, the Commission on Higher Education released the IRR of the Universal Access to Quality Tertiary Education Act, otherwise known as the free tuition law. The law, which was signed in August 2017, covers 112 state universities and colleges and 78 local universities and colleges as well as the technical-vocation education and training programmes under the Technical Education and Skills Development Authority.

Taxation

- In March 2018, the Philippines became the first sovereign in ASEAN to issue an onshore Chinese yuan-denominated bond. The 3-year debt issuance amounted to CNY 1.46 billion, equivalent to roughly PHP 12 billion or USD 230 million, and fetched a coupon rate of about 5%, or 35 basis points above benchmark rate. The government hopes that the successful issuance opens a new credit source for the private sector enterprises in the Philippines.

- In August 2018, the House of Representatives approved a bill that intends to replace rice importation quota with a 40% tariff. The bill, which is premised on lowering inflation, earmarks the tariff revenues to a rice competitiveness enhancement fund in order to support farmers.

- In September 2018, the second tranche of the tax reform programme legislation renamed as Trabaho bill (or Jobs bill) was passed by the House of Representatives Committee on Ways and Means. The substitute bill, originally called Tax Reform for Acceleration and Inclusion package 2, seeks to lower the corporate income tax from the currently mandated 30% to 28% in 2021 and to 20% by 2029, though it also targets to rationalise corporate fiscal incentives. A counterpart bill was separately filed in the Senate in August.

Foreign direct investment

- In June 2018, the Senate set a schedule to review the country’s foreign investment laws and policies intended to enhance competitiveness. Foreign ownership, which is capped at 40% in a number of industries, as well as fiscal incentives, were identified as key areas of discussion.

POLICY FOCUS

Coping with the risk of job automation in the offshoring and outsourcing industry

The information technology and business-process management (IT-BPM) sector was and continues to be a steady source of investment, foreign-currency liquidity, and high-paying employment in the Philippines. It is estimated that the sector directly employed about 1.1 million people in 2016, or around 5.6% of private-sector workers in the country, and took in USD 22.9 billion in revenues, or around 7.5% of gross domestic product.
By comparison, in 2009, IT-BPM employment stood at less than 450,000 while revenues were estimated to be roughly USD 7.2 billion (Del Prado, 2015). The influx of investment into this sector has contributed greatly to the development of infrastructure in the areas in which outsourcing offices have proliferated. In turn, this enhanced the market values of local real estate – for residential, office, and commercial spaces alike. While the IT-BPM sector does benefit from some fiscal incentives, it is also a substantial source of government revenues. In addition, the round-the-clock operations of outsourcing establishments have produced millions more indirect jobs to serve the needs of the companies and their employees.

Beyond the macroeconomic story, the relatively lucrative compensation packages that IT-BPM firms offer have underpinned an improvement in quality of life for many households. This is particularly apparent in areas outside Metro Manila, where formal-sector employment and well-paid jobs are not as widespread. Not only are basic salaries higher than in comparable professions, but fringe benefits such as health insurance also tend to have a broader scope. The latter is relevant because support from state-run social security is limited, and the cost of healthcare and medication can be steep relative to the average incomes of people, especially those without private insurance.

The looming threat of automation

As in many other industries, however, one important policy issue with regard to the IT-BPM sector is the onward march of automation, which is likely to constrain the industry’s capability to generate employment in the next few years. The effects of automation on employment in outsourcing boil down to at least two key strands.

Firstly, business tools and platforms that use artificial intelligence make it feasible for clients to conduct certain business functions in-house rather than outsourcing them. These tools and platforms also give service providers scope to reduce their workforce in order to be able to charge more competitive fees. For example, advances in cloud computing and the business model of selling access to information technology as a service is one avenue that allows firms to cut out human labour. According to ISG (2018), the annual contract value of as-a-service outsourcing rose to 43% of the global commercial market in 2017, from about 23% of in 2014. Meanwhile, the value of traditional outsourcing fell from 77% to 57% during the period.  

Secondly, the automation of repetitive functions elevates the focus in the sector – even more than before – to innovativeness and creativity, as well as to problem-solving skills and astute judgement. For outsourced projects that demand such a skill set, real-time exchanges with senior personnel from a service provider is typically required. And it is in such instances when the advantages of onshore over offshore support – such as labour proximity, agility, and flexibility – become more important (Overby, 2017).

The substantial savings in terms of financial performance and efficiency that automation can generate are key to understanding the shift in the business framework that is underway. For instance, automation, robotics, and cloud computing have driven down prices by more than 20% in some cases (ISG, 2015). Moreover, there is evidence that the automation of robotic processes not only leads to fewer mistakes and faster delivery of output, but also significantly lowers the overall price of services (Kroll et al., 2016). Cost is estimated to be just about a third of the price of a full-time employee offshore and about a fifth of the price of a full-time staff member onshore. As more evidence like this emerges, it encourages enterprises to continue to automate. Data from a recent survey by KPMG show that over 800 executives worldwide whose firms participate in outsourcing, shared services, and operations indicated that robotic process automation (RPA) is at the top of their investment agenda (KPMG and HfS Research, 2017).
Debates continue over automation’s likely impact on overall employment

Still, there seems to be no consensus as to the net effect of automation on total employment. According to one estimate, about 50% of current work activities across all industries worldwide can be automated (Manyika et al., 2017). Depending on the pace of at which companies adopt automation, this will entail a displacement of workers numbering between 10 million and 800 million, or up to 30% of the 2.66 billion combined workforce of the countries covered by the report. Moreover, as many as 375 million of these workers would need to change their occupation. According to another estimate, roughly 56% of all employment in five ASEAN countries – namely Cambodia, Indonesia, the Philippines, Thailand and Viet Nam – is at high risk of displacement due to automation over the next decade or two (Chang, Rynhart and Huynh, 2016). For the IT-BPM industry, the report claimed that 89% of contact-centre wage employees in the Philippines could be displaced due to automation over the period.

Apart from the contact centres, Kroll et al. (2016) argued that “all back office areas have processes that are strong candidates for robotic process automation”. Considering the volume of transactions and the repetitiveness and rules-based nature of the functions involved, the authors identified processes in finance and accounting as being highly susceptible to automation. Processes in human-resource management and customer services have also been identified to be suitable for automation, although not to such a degree as in accounting and finance because they do sometimes require human intervention. The proliferation of chatbots, for example, is one development that could lessen demand for customer service support personnel.2

Specific examples of processes where RPA can be used include periodic reporting, data entry and analysis, conversion of data formats and graphics, process lists and file storage, the generation of mass emails, archiving and extracting, and enterprise resource planning. In essence, the report posited that RPA in its current form can perform complex functions so long as they are largely bound by rules. The vulnerability of jobs to automation is not determined by whether they consist of manual or white-collar work, but whether the work involved is routine or not (Autor and Dorn, 2013). Moreover, wages are likely to become stickier as automation gains more ground.

On the other hand, TESDA (2017) posited that while RPA will indeed eliminate some jobs, advances in technology also have the potential to create other types of employment. The Economist (2016) provided some examples to support this view such as the proliferation of cash machines, which shifted demand from one type of labour (bank tellers) to another (sales and customer-service personnel). What is uncertain in these analyses is whether the impact of technological disruption in the past on the job market is meaningful enough to provide a picture of the potential impact of the current and future technological disruptions. Additionally, even under an optimistic scenario where a good number of new jobs will be generated resulting from technological changes as had been the case in the past according to ADB (2018), it is possible that the displaced employees will not be the same group of people who will take the new jobs generated.

The makeup of the IT-BPM in the Philippines

In terms of the makeup of the IT-BPM industry in the country, the results of the 2015 annual survey of Philippine business and industry-to-business process management – which covers 1 493 establishments in the IT-BPM industry in the Philippines – showed businesses involved in the management of customer relationships to be the biggest sub-category of employers, accounting for about two-thirds of the industry’s overall workforce (PSA, 2018). The sales and marketing sub-sector was a distant second, accounting for 12.7% of employment (Figure 3.3.1). In terms of value added and compensation per
paid employee, however, these sectors have rates below the industry average. Payroll maintenance led the other sub-sectors in these metrics, followed by application hosting and finance-related jobs. Incidentally, the three high-value added subindustries only comprise less than 2% of the industry employment. Compensation per paid employee generally tracks the value added per employee across subsectors. One exception is the application hosting subindustry where compensation per paid employee is below the sectoral average despite the high value added per paid employee ratio.

Figure 3.3.1. Annual value added and annual compensation per paid employee in business process management, 2015

![Graph showing annual value added and annual compensation per paid employee in business process management, 2015.](https://doi.org/10.1787/888933887177)

Moreover, data from the country’s central bank show that contact centres have remained steady as a share of total employment in the IT-BPM industry, providing between 61.5% and 63.8% of total sector employment from 2010 to 2013 (BSP, 2015). The share of contact centres in the IT-BPM industry’s total revenue has also been stable at over 50%. By comparison, software development made up less than 23% of overall sales, while its share in employment stayed unchanged at slightly less than 10% during the same period. When it comes to generating jobs and revenues, these trends underscore the IT-BPM industry’s still-heavy dependence on contact centres.

Yet, despite the concentration of the outsourcing workforce in contact centres, which tend to be susceptible to automation, the employment situation in the Philippines has so far remained robust. Neither the public nor the private sector appear to be pessimistic about automation’s potential impact on overall employment conditions in the near term. Although the administration has acknowledged that automation will have a significant effect on low-skilled jobs, it nevertheless anticipates growth in low-skilled services jobs of 3%-6% between 2016 and 2020 (TESDA, 2017). The IT and Business Process Outsourcing Association of the Philippines (IBPAP) is likewise still looking to add about 700 000 jobs between 2016 and 2022. This is in line with the main targets of Philippine IT-BPM Roadmap 2022, namely, raising direct employment to 1.8 million, and increasing revenue to USD 40 billion (IBPAP, 2016).

**Initial efforts to bolster the sector have borne some fruit, but there is scope to do more**

In light of the challenges that the industry has been facing in recent years, the public and private sectors have worked together on a number of initiatives to elevate the skills of the workforce in IT-BPM [Errighi, Khatiwada and Bodwell (2016); Price and Caboverde...
Over the past decade and a half, for instance, there has been an increased focus on technical and vocational education and training to provide more of the skills that the IT-BPM sector needs. In 2006, the Training for Work Scholarship Program was launched to bolster the IT-BPM and tourism sectors in areas where the supply of qualified labour had been insufficient. At the beginning of this programme, the government allotted PHP 500 million (Philippine pesos), or USD 9.7 million, in order to train prospective employees in the IT-BPM sector. Then, in two separate pledges in 2009 and 2011, the government granted additional funds totalling PHP 850 million, or USD 19.3 million, in support of this objective. Other examples of initiatives to boost competitiveness and to help the sector with the challenges it faces have included a programme launched in 2013 to improve English-language skills, and, in 2011, the Pre-Employment Training and the Global Competitiveness Assessment Tool (previously called the National Competency Test). Opened to the public in 2013, meanwhile, the Service Management Program (SPM) offers courses both in ICT and in business administration. An online version of this programme, called e-SPM, was rolled out a year later. Finally, a legislative bill creating a new government department for ICT development was also signed into law in 2016. In its New Wave Cities programme, this new ministry aims to build the capacity of cities outside Metro Manila, in order to sustain the kind of business ecosystem in which the IT-BPM sector can thrive.

Data on capital flows into the different segments of the IT-BPM sector between 2010 and 2013 shows that these funds appear to have supported the industry’s goal of upgrading the skill set of its employees (BSP, 2015). The total amount of equity flowing into software development rose by an average of 38% annually during the three-year period, largely supported by foreign direct investment (FDI). Accordingly, the share of software development as a proportion of aggregate inflows into the IT-BPM sector rose from 20.4% to 27.1% of overall equity and from 19.8% to 27.4% of total FDI. In contact centres, however, total equity and its FDI component – which stood at 17% and 16% respectively – did not grow as briskly during the same period. This resulted in a decline in contact centres’ share in total equity, from 55.2% to 46.2%, and in FDI flows from 56.4% to 48.1%. This indication that investors are keen on segments of the outsourcing industry that demand more skills can be viewed as an encouraging development as policy makers seek to protect jobs from the rise of automation.

Nonetheless, there remains ample scope for policy support. As automated processes replace repetitive functions, the IT-BPM industry in the Philippines has to compete effectively against other offshore and onshore sites for services that still require human intervention. Competing in this way is important as the country seeks to meet its employment targets, or at least to avoid a net decline in jobs. The extent to which the global market for these services picks up in the coming years will determine how tough this competition will be. The government can help the domestic industry to continuously enhance its global competitiveness for the kinds of outsourced services that will remain dependent on human labour.

In the near-term, it is imperative to not only continue investing in skills, but to expand the complexity, quality and reach of existing training programmes. The 18 ICT training programmes of TESDA has produced about half a million graduates in 2013 and 2014 (TESDA, 2017). Almost half of these students took up courses in software development, programming and IT networking, while about two-fifths of them completed courses in the installation and servicing of hardware. Relative to the employment targets of the industry, however, these numbers are modest. There also appear to be some unresolved issues with regard to both the quality of instruction and how effectively it is monitored (Price and Caboverde, 2017). Moreover, the content of training appears to have been
somewhat deficient in responding to the demands of the industry, with limited data also making it difficult to track its effectiveness. To this end, ADB (2018) pointed out that stronger links between universities, vocational centres and firms could bring about synergy gains – a challenge which has prompted China and Indonesia to increase the number of polytechnics.

On top of the deficiencies in problem solving and technical skills, Price and Caboverde (2017) also observed that a lack of proficiency in English is one of the main factors that has held back the hiring rate in recent years. Industry executives are well aware that although English-language proficiency may not restore the leverage that domestic firms used to have over foreign competitors in this regard, it is still something that clients look for in the workforce of the firms they choose as their service providers. It is, therefore, worth examining why the industry continues to find this challenging despite government programmes that have tried to help.

The limited ability of government agencies to assess their programmes raises questions on how efficiently they have been allocating funding. It also calls into question the likelihood that the programmes will help firms to fill the kinds of job positions for which they aim to train candidates. While the private sector can conduct its own training programmes – and some companies are already doing just that – this adds to the cost of doing business. Apart from the cost, the timescale is another issue that comes up. For example, a voice-based customer-support agent with a less technical background may need a substantial amount of time and training to acquire a skill set that is less routine and more resilient to automation. Another issue is the high rate of turnover among employees, which forces firms to be very selective in the employees that they train.

Over the medium term, the IT-BPM sector can, just like any other sector, benefit from improvements in the overall competitiveness of the country’s economy. In this regard, the quality of basic public education has a key role to play, particularly in areas outside Metro Manila. The recent implementation of a twelve-year cycle of schooling – known as K-12 – has essentially extended mandatory basic education by an extra two years, and this may help the Philippines achieve the labour-market outcomes that its government desires, especially with regard to workers who are unlikely to go on to study for a degree.

However, this assertion depends on several factors, particularly the responsiveness of the overall design of the basic education programme to the industry’s evolving labour requirements, as well as the sufficiency and quality of teachers and other educational resources. Expanding the coverage of the e-SMP initiative by integrating its manuals into the K-12 curriculum is one possible initiative that is worth a closer look as a way to enhance communication capabilities and technical skills among high-school graduates. Universities can help in improving the contents of the training and learning manuals they produce. Moreover, encouraging the use of relevant massive open online courses (MOOCs) and other open resources might also be useful to this end. It is certainly worth examining the value of MOOCs in enhancing access and quality in public tertiary education in the Philippines – as explained by PIDS (PIDS and CHED, 2015).

The quality of infrastructure, particularly in the area of ICT, and the competitiveness of the overall business climate remain crucial for supporting employment growth in the IT-BPM industry. For instance, although there have been significant improvements in ICT infrastructure in the Philippines over the past few years, the cost, stability and quality of services are still far from ideal. A lack of competition can limit the incentives for industry players to make significant progress in these respects.
### Key government ministries in the Philippines

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<th>Ministry</th>
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<tbody>
<tr>
<td>President</td>
<td>Rodrigo Duterte</td>
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<tr>
<td>Vice President</td>
<td>Maria Leonor Robredo</td>
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<tr>
<td>Agrarian Reform</td>
<td>John Castriciones</td>
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<td>Agriculture</td>
<td>Emmanuel Piñol</td>
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<td>Budget and Management</td>
<td>Benjamin Diokno</td>
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<td>Education</td>
<td>Leonor Briones</td>
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<td>Energy</td>
<td>Alfonso Cusi</td>
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<td>Environment and Natural Resources</td>
<td>Roy Cimatu</td>
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<td>Finance</td>
<td>Carlos Dominguez III</td>
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<td>Foreign Affairs</td>
<td>Teodoro Locsin, Jr</td>
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<tr>
<td>Health</td>
<td>Francisco Duque III</td>
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<tr>
<td>Information and Communications Technology</td>
<td>Eliseo Rio Jr. (Acting)</td>
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<td>Interior and Local Government</td>
<td>Eduardo Año (OIC)</td>
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<td>Justice</td>
<td>Menardo Guevarra</td>
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<td>Silvestre Bello III</td>
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<td>National Defense</td>
<td>Delfin Lorenzana</td>
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<td>Public Works and Highways</td>
<td>Mark Villar</td>
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<td>Science and Technology</td>
<td>Fortunato de la Peña</td>
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<td>Social Welfare and Development</td>
<td>Rolando Bautista</td>
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<td>Tourism</td>
<td>Bernadette Fatima Romulo-Puyat</td>
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<td>Trade and Industry</td>
<td>Ramon Lopez</td>
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<td>Transportation</td>
<td>Arthur Tugade</td>
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<td>Central Bank Governor</td>
<td>Nestor Espenilla Jr.</td>
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</table>

Note: Valid as of 16 October 2018.

### Notes

1. The ISG data from 2018 only cover contracts with an annual value of at least USD 5 million.
2. Accenture (2016) and Deloitte (2018) present in detail the functionality of chatbots.

### References


ISG (2018), “Global Sourcing and As-a-Service Market Insights Fourth Quarter and Full Year 2017”, ISG Index, Stamford, CT.


