

GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
RAJYA SABHA
STARRED QUESTION NO. *113
TO BE ANSWERED ON 27.07.2018

DEMAND AND SUPPLY OF DATA SCIENTISTS

***113. DR. KANWAR DEEP SINGH:**

Will the Minister of ELECTRONICS AND INFORMATION TECHNOLOGY be pleased to state:

- (a) whether there is a huge mismatch between the demand and supply of Data Scientists in the country;
- (b) if so, the extent of this gap and the reasons therefor; and
- (c) the steps being taken by Government to fill this gap?

ANSWER

MINISTER FOR ELECTRONICS AND INFORMATION TECHNOLOGY
(SHRI RAVI SHANKAR PRASAD)

(a) to (c): A statement is laid on the Table of the House.

**STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED
QUESTION NO.*113 FOR 27.07.2018 REGARDING DEMAND AND SUPPLY OF
DATA SCIENTISTS**

(a) and (b): The projection of availability of Data Scientists is provided by the industry, in this case NASSCOM, the recognized body of I.T industry, in whose view there is a mismatch which requires improvement.

A research commissioned by National Association of Software and Services Companies (NASSCOM), indicates that at the generic level of occupation, there is a demand for about 5.00 Lakh people in the area Artificial Intelligence/ Big Data as against around 3.7 Lakh of employed talent in the year 2018. The research also projects the expected demand to grow to about 7.5 lakh people in the year 2021, as against around 5.5 Lakh of employed talent. The research further indicates that in the year 2021, out of total demand of around 7.50 Lakh people, about 5.00 Lakh or more would be in various analyst roles; around 1.50 Lakh in big data roles; and about 1.00 Lakh in data science roles.

NASSCOM also indicates that the reason for this gap is that Big Data is a new technology which is yet to permeate into the supply side on appropriate scale in colleges/universities/training curriculum, etc. Additionally, the current employee base is in the process of acquiring these skills through re-skilling / up-skilling initiatives. Impediments in increasing the talent pool includes lack of job standards w.r.t. Data Scientist and the necessary infrastructure (access to the requisite connectivity & bandwidth, software and programming languages required and also availability of data sets), shortage of Master Trainer / Trainers, etc.

(c): Government is aware of the Big Data/Analytics talent deficit which can be an opportunity to create employments avenues and has taken several measures which includes the following:-

- MeitY has signed a Memorandum of Understanding (MoU) with NASSCOM, to collaborate and strengthen their cooperation in the field of skill development particularly with respect to the re-skilling and up-skilling imperative in areas of new and emerging technologies (including Artificial Intelligence/Data Science) with Government acting as an enabler/facilitator.
- NASSCOM has launched a future skills platform for Business to Business (B2B) skilling of company sponsored IT professionals (<http://futureskills.nasscom.in>). One of the focus areas of this platform is the Artificial Intelligence/Big Data space, wherein data scientist training is also covered.
- AICTE's SWAYAM and MHRD's NPTEL are made available to educate individuals across legacy and new-age technologies such as Cloud computing, Data Science/ Big Data and Analytics etc.
- Department of Science & Technology (DST) has formulated a **National Mission on Interdisciplinary Cyber Physical Systems (ICPS)** wherein the Data Science and predictive technology is one of the focused area. The Mission would aim at generating Post Graduate, Doctoral, Post Doctoral Fellow to enhance the Data Scientist skills of the country, thereby generating required Human Resources to meet the present and future demands.
- Many Government academic and R&D institutions in India are conducting several Big Data related courses. For example, IIT Kharagpur, IIM Calcutta and ISI Kolkata

jointly conduct a 2 year full time Post Graduate Diploma in Business Analytics (PGDBA); IIT Hyderabad conducts a two year Executive M.Tech. in Data Science; IIT Kanpur conducts a short term course on Big Data (under Technical Education Quality Improvement Programme (TEQIP)); and NIT Tiruchirappalli conducts an M.Tech. in Data Analytics.

- In addition, MeitY's two autonomous societies namely Centre for Development of Advanced Computing (C-DAC) and National Institute of Electronics and Information Technology (NIELIT) also conduct various courses in this area. C-DAC conducts 'Post Graduate Diploma in Big Data Analytics' (PG-DBDA) which is 24 weeks course (twice a year) under which 649 students have passed so far and about 228 students are undergoing training. NIELIT conducts courses such as 'Certified Data Scientist', 'Advanced Diploma program in Big Data' and other courses on Big Data Analytics ranging from 6 weeks to 6 months besides workshops of 1-5 days. So far, more than 550 students have been trained/undergoing training in these courses.
