IT NEXT

FOR THE NEXT GENERATION OF CIOs

INDIA's FUTURE CIOs

NEXT ₹100
2021

SPECIAL COVERAGE

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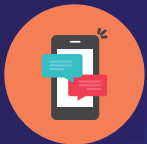
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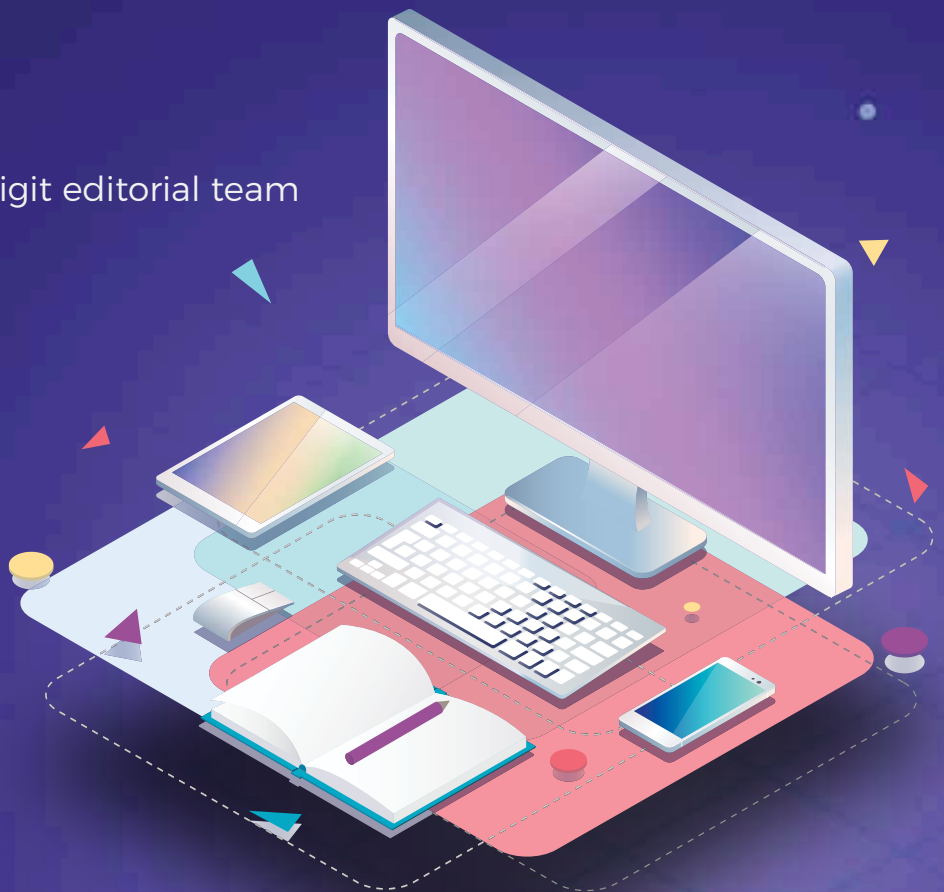Become a Digit Certified tech influencer

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From Future CIOs to CIOs of Future

> Like it or not, while there are competencies, qualities and values to be inherited from the leaders you work with, you cannot reach that leadership position by just following their footprints. You have to chart your own path.
>
> **Shyamanuja Das**

Congratulations to the 12th batch of NEXT100 awardees. It is my pleasure to welcome them to the exclusive NEXT100 club.

As yet another new year approaches, with the uncertainties over the pandemic still looming large, the digitization which had picked up during the first wave of the pandemic – which some cynically referred to as a knee-jerk reaction – is here to stay.

And so, you, the next generation leaders, need to be prepared for that. As the program explicitly says, NEXT100 is a program for identifying the future CIOs. While the recognition is to be celebrated, it is the beginning of a new journey. And the path – since the pandemic has started – has taken a sharp turn.

Like it or not, while there are competencies, qualities and values to be inherited from the leaders you work with, you cannot reach that leadership position by just following their footprints. You have to chart your own path.

Recently, I was moderating a discussion on CIO succession planning. Veteran CIOs who participated in the discussion – as also about 70 CIOs who took part in an online survey on the same topic - agreed on a few things. One, there is very little such planning today. Two, the planning should be more and less about leadership training. Three, a capsule program for CIOs would help immensely.
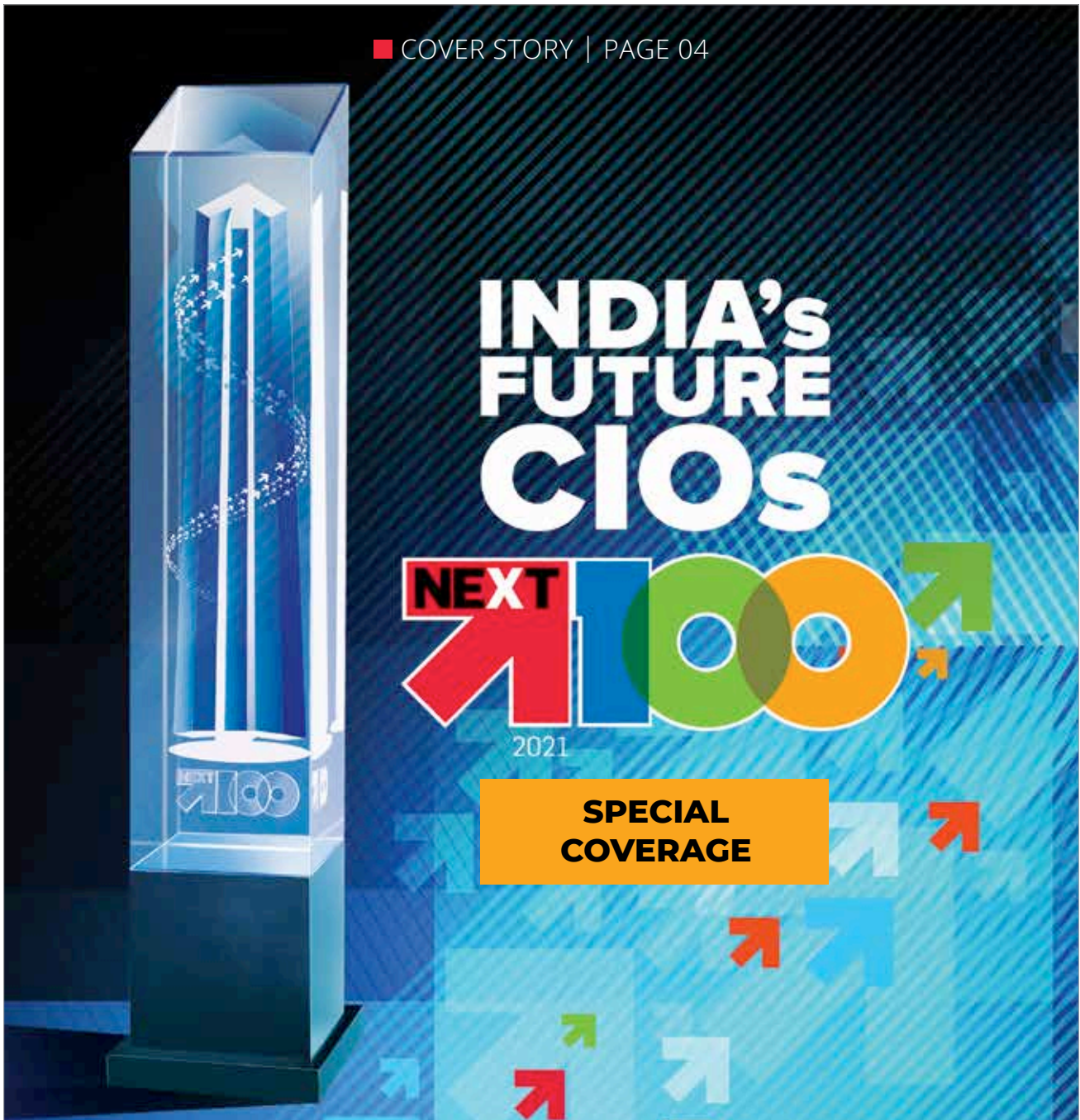
While they lamented that such a program does not exist, many of them were hopeful that a program to identify the candidates for such a program does exist. And you have just entered that list. No need to be more explicit than that; that program is NEXT100.

The basis for NEXT100 selection is, apart from a few data points, is largely the future potential. Be it the thorough CIO interviews or the psychometric tests. But there is a universal truth. Not all people having the potential end up on the podium. Apart from many external factors, it depends on how you move from there. Many thought Kambli had equal, if not greater, potential as Sachin Tendulkar. We have seen how their careers have progressed.

But the bigger point I am making is what I said earlier. Because of the importance of digitization and technology's tight alignment with business, the role of a CIO would be very different in future. Your journey from here would depend on not just how you plan your journey, but what is the destination you choose. It has to be what kind of leader you want to be; not just one designation or the other! ∎

Content

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INDIA's FUTURE CIOs

NEXT 100

2021

SPECIAL COVERAGE

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ANIL VK

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INDIA's FUTURE CIOs NEXT100 2021

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Principal Consultant,
Tata Consultancy Services

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Nivea India

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ValueFirst (A Twilio Company)

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Chandramauuli Ramcharan Sharma
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Munish Sharma
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Senior Manager - Agile Delivery, Diebold Nixdorf

Puneet Sharma
Senior Manager - IT, Bharti Realty

Saurabh Sharma
Assistant General Manager, Bennett, Coleman & Company

Shivkant Sharma
Senior IT Security Engineer, RxLogix

Yatish Shivaprasad
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CISO, Dharampal Satyapal

Ramanjeet Singh
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Ravi Singh
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Rohit Taru
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Kasiraja Thangapandian
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Prakash Tripathi
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Arun Venkataraman
Solution Consultant, Tata Consultancy Services

Gaurav Virmani
Head - Program Management & Design Operations, Aristocrat Technologies India

Nainesh Vyas
General Manager & Head - IT, Century Enka

Akanksha Yadav
Manager - IT, Maruti Suzuki India

INDIA's FUTURE CIOs

NEXT100 2021

AWARDS PROCESS

381 applicants completed the psychometric tests

680 IT managers registered for the NEXT100 process

341 referee and supervisor feedback reports were received

58% of the winners have between 11 to 20 years of work experience

306 total interviews conducted by the jury

39 senior CIOs as jury members conducted the interviews

79% of the winners are less than 45 years of age

72% of winners work in organizations with total turnover of INR 10,000 crore or above

47% of the winners are based out of Mumbai and Delhi NCR

59% of the winners work in services sectors

56% of winners have more than 15 people reporting to them

65% of the winners receive an annual compensation exceeding INR 30 lakhs

59% of the winners work in organizations with IT budget of INR 25 crore or above

Popular Qualifications
- **Bachelors:** Engineering & Technology, Computer Science, Commerce

Popular Hobbies
Travel, Music, Cooking, Cricket, Reading Books, Photography

Popular Certifications
ITIL, PMP, CCNA

Popular Business & Management Expertise
Project & Program Management, IT Strategy & Planning, Vendor Management, Budgeting & Financial Management, Customer Support Service Management

Methodology

The selection process for the NEXT100 2021 commenced on 15 July 2021 with a call for applications. The entire IT manager community was informed through a series of e-mails, print advertisements, and the social media. By 30 September 2021, when the application closed, there were 680 applicants who had registered for the process.

The selection of the award winners was done through a three-stage process, as in the past years. In the first stage, all award aspirants had to complete a detailed application form—and provide extensive personal and professional information, including education, technical skills, and work experience. They also had to nominate referees who could support their claim for consideration for the award.

In the second stage, applicants took two psychometric tests: Personality profiles tests and emotional quotient & intelligence tests. The tests were administered online by Paris-based Central Test International. Every applicant who completed all the tests received a free, personalized copy of the assessment reports for reference.

The NEXT100 jury members identified a set of criteria (including education, length, and quality of work experience) to prepare a short list of candidates for the interview stage.

Every shortlisted candidate was independently interviewed by two NEXT100 jury members. Separately, independent recommendations were obtained for each candidate from the designated referees, including current supervisors.

The scores and evaluations assigned to all candidates in every stage of the selection process were input into a proprietary scoring model that assigns carefully calibrated weights to various factors. The final list of NEXT100 award recipients, listed in this magazine, is an outcome of this scoring model.

To ensure that the NEXT100 awards are completely fair and unbiased, no member of the IT NEXT editorial team was involved in the selection or elimination of the award winners, nor are editors and staff of IT NEXT magazine a part of the jury panel.

As in past years, the NEXT100 awards program draws on the knowledge and support of the CIO community.

Thirty-nine senior executives who comprised the jury of the NEXT100 awards, collectively represent many hundreds of years experience in IT and corporate management, were involved as advisors, interviewers, and selectors this year.

The jury panel debated, deliberated, and decided on the award winner selection process—and conducted detailed interviews of all shortlisted applicants.

Psychometric Tests

All aspirants for the NEXT100 awards take two psychometric evaluations—a personality test and an emotional quotient test—that are administered by Paris-based Central Test. The results of the tests are factored into the total evaluation of the candidate. All candidates who take the evaluations receive detailed personalized reports that can be used for self development.

The Central Test Personality Inventory for Professionals (CTPI-R) test provides an assessment of work-related personality traits that play a crucial role in performance. According to the test designers, CTPI-R conforms to the standards of scientific validation set out by the International Test Commission, and the American Psychological Association.

The workplace competencies are defined as "clusters of knowledge, skills and attitudes that are predictive of superior performance in a given job". According to Central Test, the competency scores in the CTPI-R are not a 'direct assessment' of competencies but an 'assessment of proximity' of the test taker to the profile of others who have demonstrated a high level of that specific competency.

The assumption behind this method of evaluation is that people with similar profiles will be more likely to exhibit similar abilities. As the scores are derived from an assessment of proximity to an ideal profile, they give an indication of the extent to which the candidate is psychologically inclined towards high performance on a specific competency. The score

on each dimension of competency also provides an indication of the extent to which the person is trainable on each competency.

The Emotional Quotient test, introduced for the first time in 2018, assesses the ability to perceive, understand and manage one's own emotions and those of others—an essential leadership requirement in modern times.
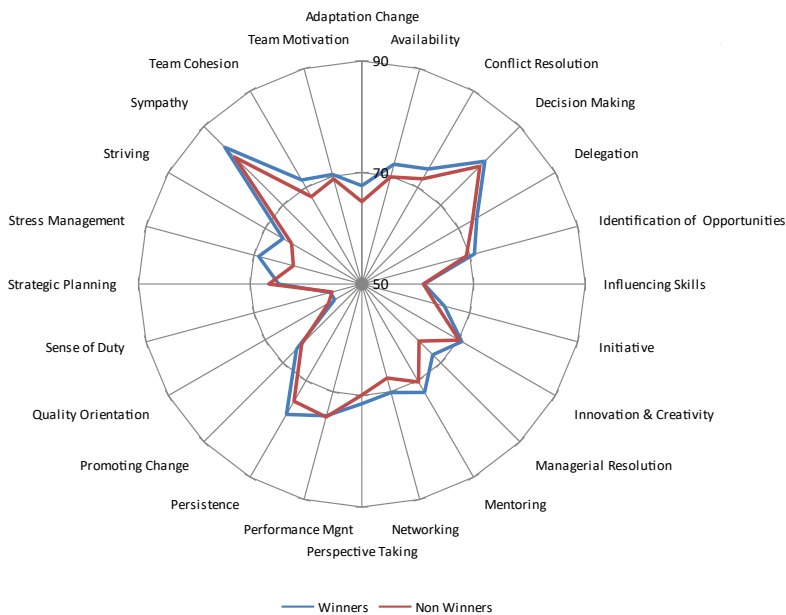
The personality test measures four dimensions – intra-personal intelligence, personal development, self-assertion, and leadership. The participants are measured across 12 parameters: adaptability, self-knowledge, self-motivation, self-control, assertiveness, self-confidence, inter-personal skills, self-esteem, optimism, resilience, mediation & influence, empathy & lucidity.

Workplace Competencies

According to Central Test, the CTPI-R test has been standardized on an international group of 5,000+ working managerial professionals. The test uses a continuous scale of 0 to 100% to deduce 24 competencies that are relevant in the workplace. The conclusions are based on statistical studies and theoretical models.

The overall analysis of workplace competencies of NEXT100 applicants reveals that there is not much of a difference between winners and other applicants when it comes to workplace competence. The only area with a significant difference between the two sets is stress management. Other noticeable differences exist in managerial resolution and mentoring. In general, all contestants show good decision making and sympathy, while sense of duty and quality orientation are low among all.
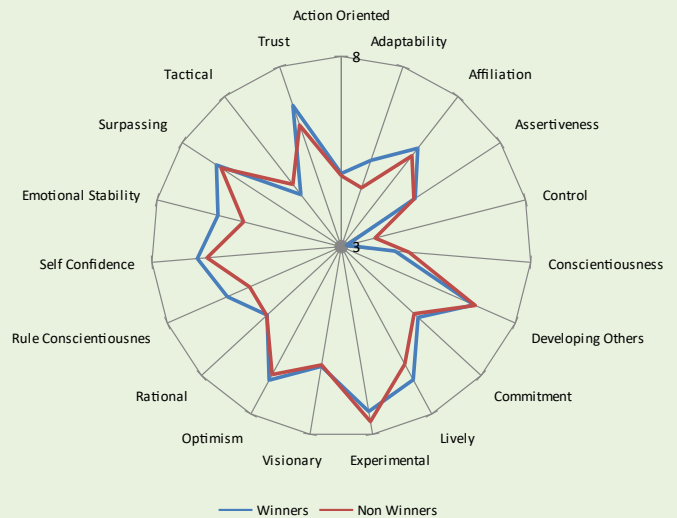
Personality Profile

The CTPI-R test provides an assessment of work-related personality traits that play a crucial role in performance. The test measures work personality across 19 dimensions. These dimensions are organized into four groups: People Management, Perception Mode, Self Management and Change Management.

The test results are reported on a scale of 0 to 10, with 0 implying a low level and 10 implying a high level of conformance to the behavioral characteristic. As compared to other applicants, the winners exhibit self-confidence and trust. They are extremely low on control. The non-winners are, however, more experimental.

Legend: — Winners — Non Winners

Legend: — Winners — Non Winners

|			
Sympathy:	Effectively identifying and understanding the needs of another person.	**Persistence:**	Demonstrating determination and maintaining a high level of energy in the performance of duties.
Perspective Taking:	Taking a step back to analyze facts and situations objectively before acting or deciding.	**Initiative:**	Seizing opportunities and being a driving force to create or move things forward.
Stress Management:	Managing one's own emotions and remaining calm and productive in challenging situations.	**Strategic Planning:**	Establishing action plans to anticipate future developments.
Delegation:	Assigning tasks and responsibilities appropriately, according to individual abilities and needs.	**Team Motivation:**	Leading a group of people towards a common objective by winning their support and pushing them to surpass themselves.
Performance Management:	Monitoring, managing and evaluating employees' performance in order to maintain standards and targets.	**Promoting Change:**	Communicating a new vision in an engaging and inspirational manner to encourage involvement.
Decision Making:	Making the best possible choice based on the information available, as well as being able to explain these decisions.	**Adaptation to Change:**	Being able to adapt to change, adjusting one's behavior or attitude to an environment and people.
Conflict Resolution:	Maintaining harmony within the team by mediating conflicts.	**Availability:**	Being committed to the organization and being willing to help others whenever possible.
Mentoring:	Taking responsibility for employees' development and progression by coaching them to help them improve.	**Identification of Opportunities:**	Understanding the market perfectly in order to be able to identify and seize business opportunities.
Team Cohesion:	Encouraging activities that will enable united and productive teams.	**Influencing Skills:**	Promoting ideas and convincing others, as well as, communicating in an assertive and tactical manner.
Innovation/Creativity:	Thinking outside the box and looking at things from new perspectives.	**Sense of Duty:**	Respecting and adhering to codes of conduct, remaining honest, and being reliable.
Networking:	Making contacts and developing a network of influential people for potential opportunities.	**Striving:**	Constantly seeking to excel and surpass one's goals.
Managerial Courage:	Speaking confidently and setting limits when the situation demands it.	**Quality Orientation:**	To be meticulous with an eye for detail to ensure the highest level of quality and service.

Emotional Skills

The Emotional Quotient test assesses the ability to perceive, understand and manage one's own emotions and those of others. The participants are measured across 12 parameters: Adaptability, self-knowledge, self-motivation, self-control, assertiveness, self-confidence, inter-personal skills, self-esteem, optimism, resilience, mediation & influence, empathy & lucidity.

The NEXT100 winners were ahead of other applicants noticeably in self-regard, assertiveness, dealing with diversity, empathy, and resilience. In general, they lead in all aspects.

Winners — Non Winners
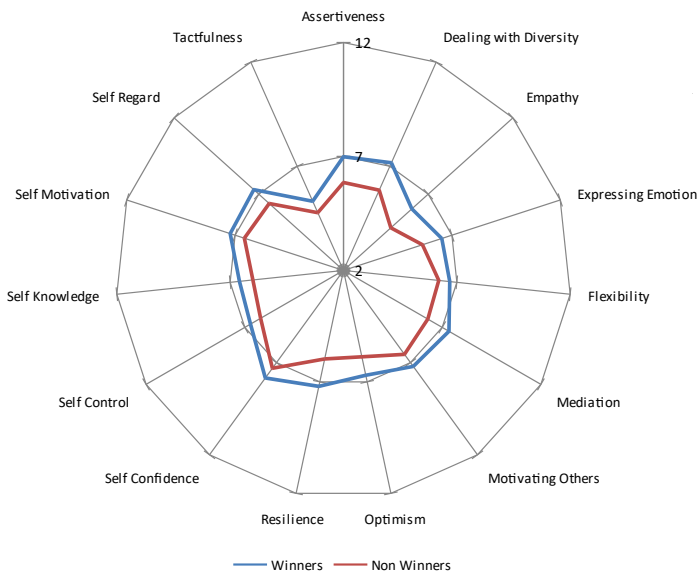
Leadership Suitability Fit

Emotional Intelligence measures four dimensions – intra-personal intelligence, personal development, self-assertion, and leadership, based on the parameters. The NEXT100 winners led other applicants in each of the four parameters and did so by a good margin.

Winners — Non Winners
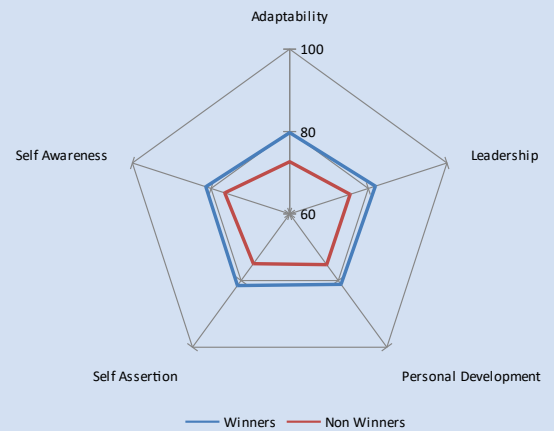
● **Self-knowledge:** Being self-aware means being able to identify what emotions are being felt and what sets them off; it means listening to one's own desires, needs and motivations. People who are self-aware know how to analyze their own reactions and behavior.

● **Self-motivation:** This trait determines the ability to find the resources within oneself in order to become and remain motivated. People who have this drive will adopt a positive attitude in any situation and will show perseverance and tenacity.

● **Self-esteem:** Self-esteem corresponds to how much one values oneself. By recognizing their own strengths and weaknesses, people understand what they are worth and they are not dependent on what others think; they thrive more easily.

● **Resilience:** Resilience is the ability to get back on one's feet after disappointment or failure. By learning from mistakes, people are better able to cope with failure and struggle. High resilience allows people to move forward and not be burdened with regret.

● **Self-control:** Self-control is an important asset for becoming socially accepted. This refers to the ability to control impulses and excessive reactions such as anger, exasperation, anxiety or melancholy—so that people can think and act calmly in any type of context. People who demonstrate good self-control give an impression of stability. They can cope with difficult situations such as conflict or stress without revealing their feelings and they are able to ease tension.

● **Adaptability:** Adaptability is an essential characteristic for building good social and occupational relationships and fitting in an environment. Being able to adapt means being able to let go of habits and to easily change points of reference. Adaptable people are able to share opinions and feelings, while taking specific situations and points of view into account.

● **Optimism:** Optimism is one facet of emotional intelligence and also a result of emotional intelligence: feeling good about oneself and one's relationships leads to more confidence in the future. Being optimistic means being generally happy with life, seeing the positive side of things and thinking that the best is yet to come.

● **Self-confidence:** Being self-confident is, above all, having a strong belief in oneself and in one's abilities. Self-confidence can manifest itself in personal skills allowing us to surpass our own objectives and gain autonomy. It also enables us to tackle challenges and unexpected events more serenely.

● **Empathy and Lucidity:** Empathy is about putting oneself in another person's shoes and understanding what is on his or her mind, all while staying true to oneself. Being similar to clear-sightedness, empathy helps a person understand the big picture and read between the lines, in terms of psychology (such as figuring out the unspoken goal of someone trying to sound convincing) or facts.

● **Assertiveness:** Being assertive is the ability to express oneself and make one's voice heard without being uselessly aggressive. Assertive people can find their place more easily in a group and share opinions and feelings more effectively. When a situation calls for confrontation, an assertive person will not turn away. This is why being excessively assertive can be seen as being arrogant.

● **Mediation and Influence:** This trait evaluates the ability to develop arguments, motivate others and inspires enthusiasm, thanks to a good understanding of who people are and how they react. Mediation and influence also refer to an ability to reconcile diverging points of view in situations of conflict.

● **Interpersonal Skills:** Having good interpersonal skills means being good at forming and maintaining relationships with others. Being authentic is a must! People who have good relationship skills can easily share their emotions and feelings and they feel comfortable in groups and communicate without difficulty.

INDIA's FUTURE CIOs NEXT100 2021

WINNERS IN NUMBERS

Know what differentiates winners
from other applicants...

GENDER BREAK-UP

Inner Circle:
NEXT 100 Winners

Outer circle:
Other Applicants

3%
4%
96%
97%

■ Male ■ Female

AGE

Age	NEXT 100 Winners	Other Applicants
35 years or less	24%	22%
36 to 40 years	29%	41%
41 to 45 years	26%	21%
46 to 50 years	17%	13%
More than 50 years	4%	3%
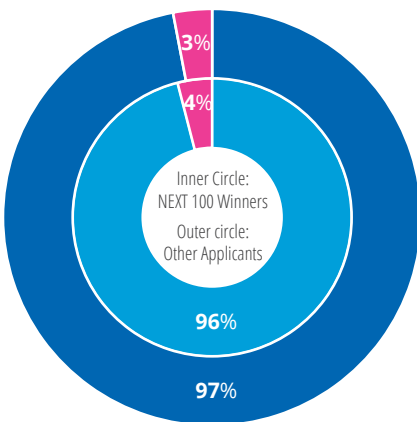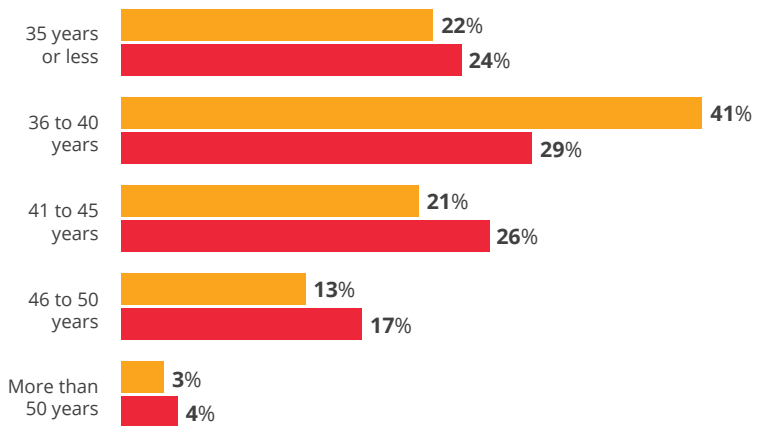
■ NEXT 100 Winners ■ Other Applicants

CITIES: NEXT100 WINNERS VS OTHER APPLICANTS

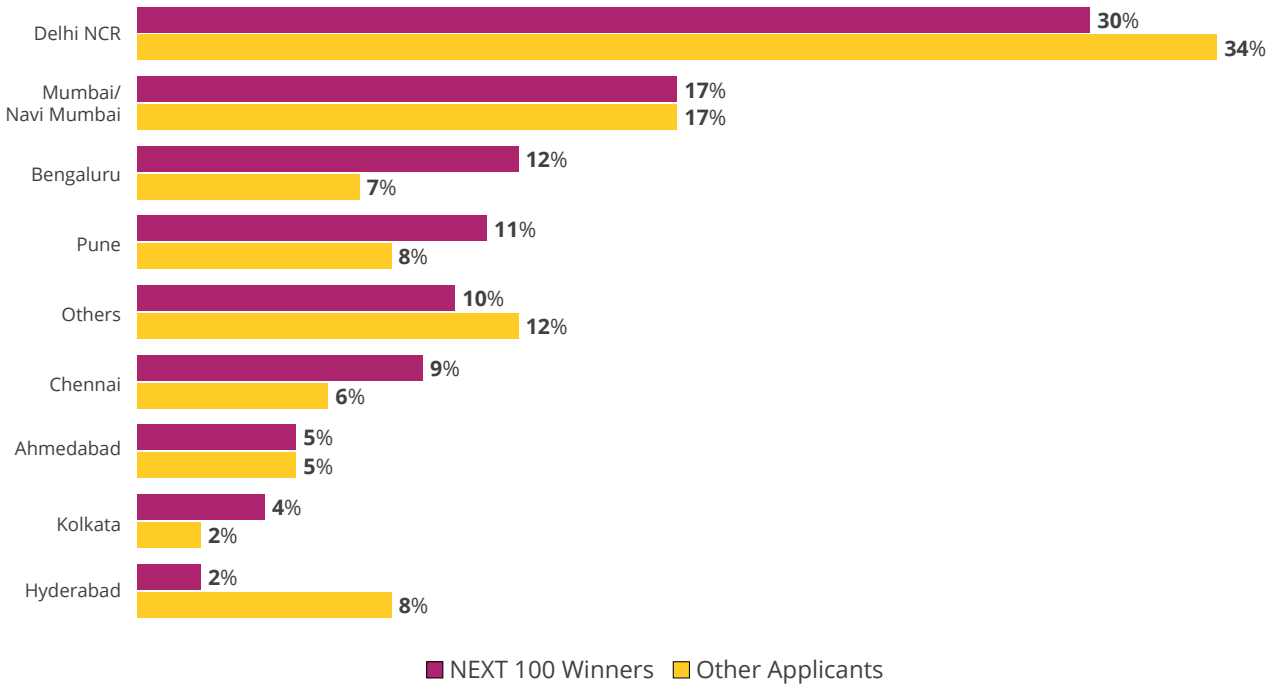| City	NEXT 100 Winners	Other Applicants
Delhi NCR	30%	34%
Mumbai/Navi Mumbai	17%	17%
Bengaluru	12%	7%
Pune	11%	8%
Others	10%	12%
Chennai	9%	6%
Ahmedabad	5%	5%
Kolkata	4%	2%
Hyderabad	2%	8%

■ NEXT 100 Winners ■ Other Applicants

WORK EXPERIENCE

Experience	NEXT 100 Winners	Other Applicants
7 to 10 years	14%	9%
11 to 15 years	25%	39%
16 to 20 years	33%	32%
21 to 25 years	19%	14%
More than 25 years	9%	6%

■ NEXT 100 Winners ■ Other Applicants

REPORTING TEAM SIZE

Team Size	NEXT 100 Winners	Other Applicants
None	3%	3%
1 to 5	18%	14%
6 to 10	12%	28%
11 to 15	11%	15%
16 to 20	8%	12%
21 to 50	25%	16%
51 to 100	7%	4%
101 - 200	9%	4%
More than 200	7%	6%

■ More than 200 ■ 101 - 200 ■ 51 to 100
■ 21 to 50 ■ 16 to 20 ■ 11 to 15 ■ 6 to 10
■ 1 to 5 ■ None

ANNUAL CTC

	NEXT 100 Winners	Other Applicants
More than 50 lakh	20%	16%
INR 45 to 50 lakh	8%	5%
INR 40 to 45 lakh	10%	2%
INR 35 to 40 lakh	13%	6%
INR 30 to 35 lakh	14%	12%
INR 25 to 30 lakh	10%	17%
INR 20 to 25 lakh	13%	14%
INR 15 to 20 lakh	8%	14%
Less than INR 15 lakh	4%	13%

■ NEXT 100 Winners ■ Other Applicants

ORGANIZATIONAL REVENUE

	NEXT 100 Winners	Other Applicants
More than INR 10,000 cr	72%	17%
INR 5,000 to 10,000 cr	10%	6%
INR 1,000 to 5000 cr	8%	9%
Less INR 100 cr	10%	68%

■ NEXT 100 Winners ■ Other Applicants
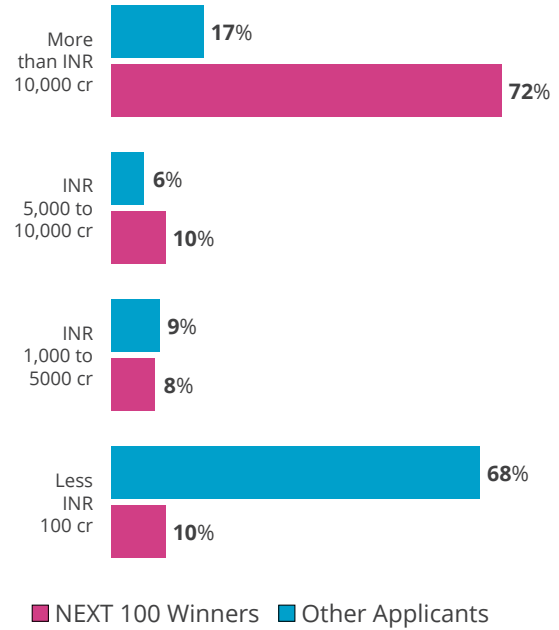
GRADUATION SPECIALIZATION

	NEXT 100 Winners	Other Applicants
Engineering & Technology	43%	34%
Computer Science	19%	25%
Commerce	14%	14%
Electronics	3%	3%
Mathematics	2%	4%
Physical Sciences	3%	3%
Others	12%	12%
Computer Applications	4%	5%

■ NEXT 100 Winners ■ Other Applicants
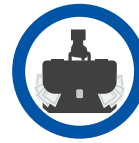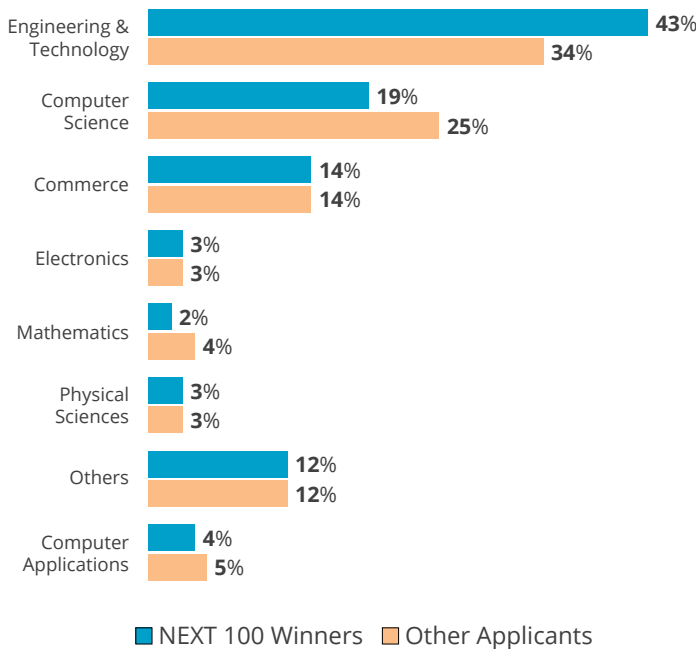
ORGANIZATIONAL IT BUDGET

	NEXT 100 Winners	Other Applicants
< INR 50 lakh	1%	2%
INR 50 lakh to 1 cr	7%	9%
INR 1 to 5 cr	7%	21%
INR 5 to 10 cr	7%	12%
INR 10 to 25 cr	19%	12%
INR 25 to 50 cr	9%	8%
> INR 50 cr	50%	36%

■ NEXT 100 Winners ■ Other Applicants
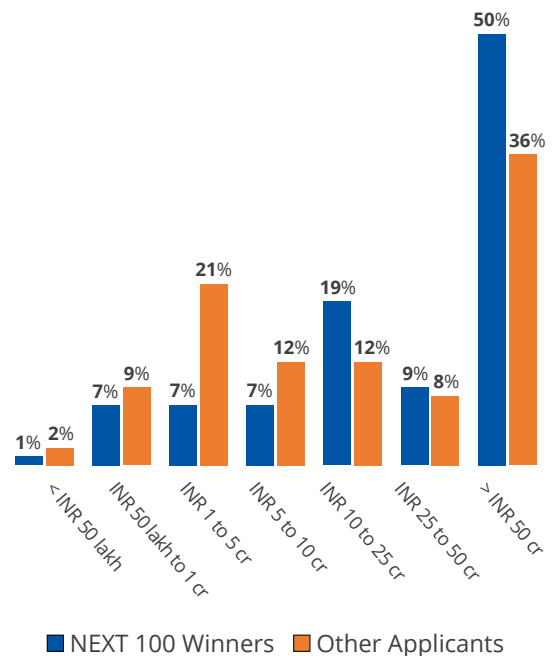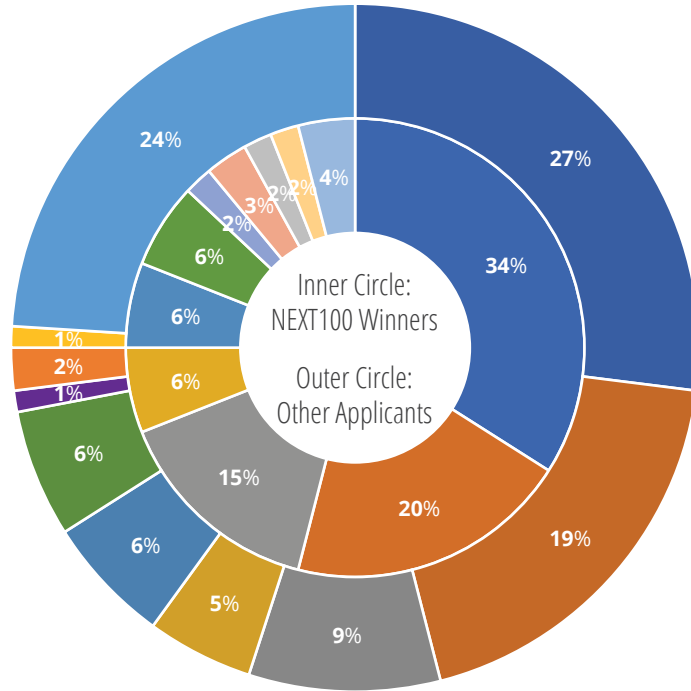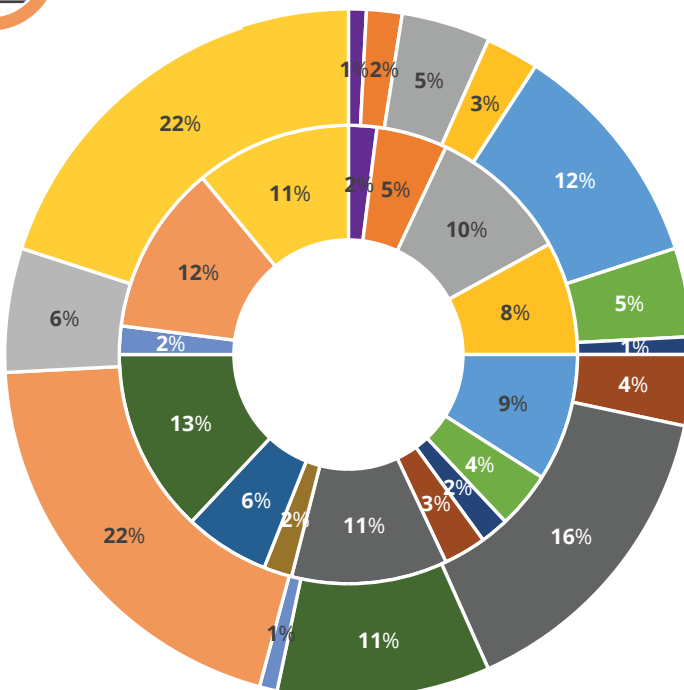
INDUSTRIES THEY COME FROM

- IT & ITES
- Manufacturing
- BFSI
- FMCG
- Engineering & Construction
- Healthcare & Pharma
- Consulting
- Media & Entertainment
- Utilities
- Telecom
- Others

Inner Circle:
NEXT100 Winners

Outer Circle:
Other Applicants

Inner Circle: 27%, 20%, 9%, 5%, 6%, 6%, 1%, 2%, 1%, 6%, 6%, 2%, 3%, 2%, 2%, 4%

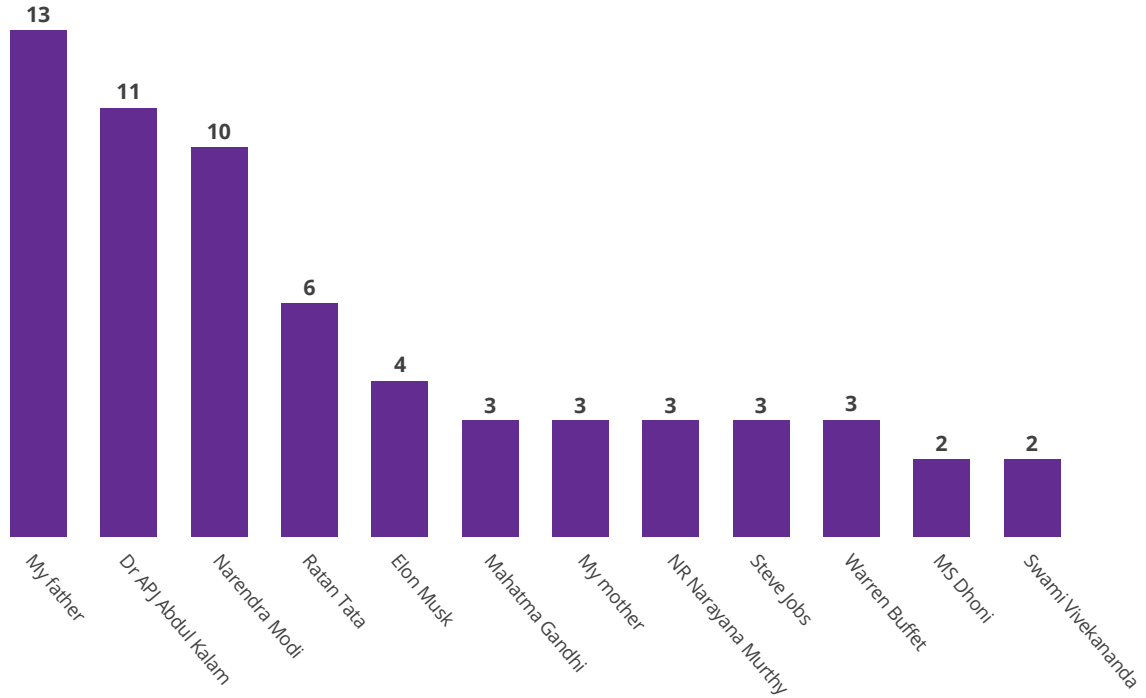Outer Circle: 34%, 19%, 15%, 6%, 6%, 6%, 24%

DESIGNATIONS

- SVP/EVP
- VP
- GM/Sr GM
- AVP
- AGM/DGM
- CISO/Head - Information Security
- Sr Director
- Director
- Head - Function
- Associate Director
- Lead/Sr Lead/Principal/Principal Consultant
- Sr Manager/Chief Manager
- Sr Consultant
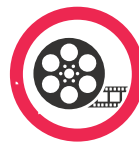- Manager
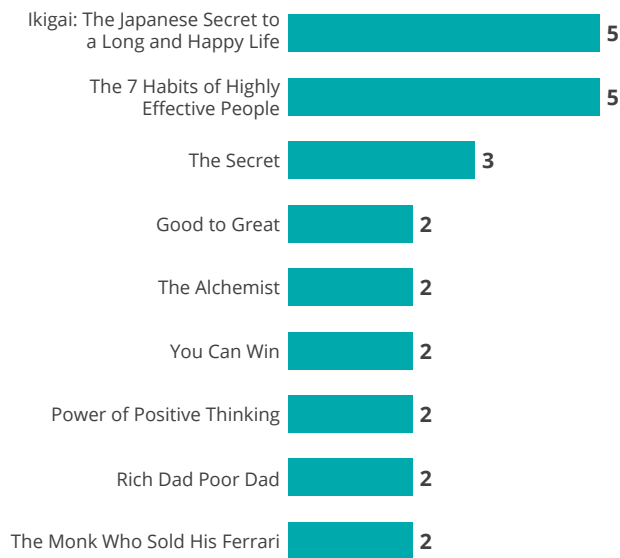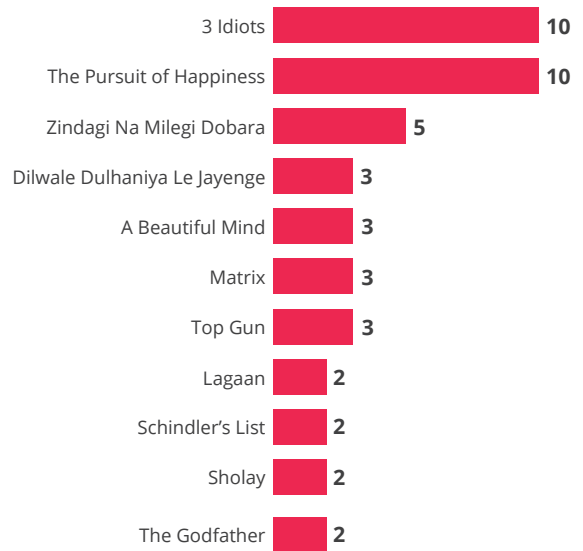- CTO/CIO/Group CIO/Regional CIO
- Others

Inner Circle: 2%, 5%, 10%, 8%, 9%, 4%, 2%, 3%, 11%, 2%, 6%, 13%, 2%, 12%, 11%

Outer Circle: 1%, 2%, 5%, 3%, 12%, 5%, 1%, 4%, 16%, 11%, 1%, 22%, 6%, 22%

FAVORITE PERSONALITIES

Personality	Count
My father	13
Dr APJ Abdul Kalam	11
Narendra Modi	10
Ratan Tata	6
Elon Musk	4
Mahatma Gandhi	3
My mother	3
NR Narayana Murthy	3
Steve Jobs	3
Warren Buffet	3
MS Dhoni	2
Swami Vivekananda	2

FAVORITE BOOK

Book	Count
Ikigai: The Japanese Secret to a Long and Happy Life	5
The 7 Habits of Highly Effective People	5
The Secret	3
Good to Great	2
The Alchemist	2
You Can Win	2
Power of Positive Thinking	2
Rich Dad Poor Dad	2
The Monk Who Sold His Ferrari	2

FAVORITE FILMS

Film	Count
3 Idiots	10
The Pursuit of Happiness	10
Zindagi Na Milegi Dobara	5
Dilwale Dulhaniya Le Jayenge	3
A Beautiful Mind	3
Matrix	3
Top Gun	3
Lagaan	2
Schindler's List	2
Sholay	2
The Godfather	2

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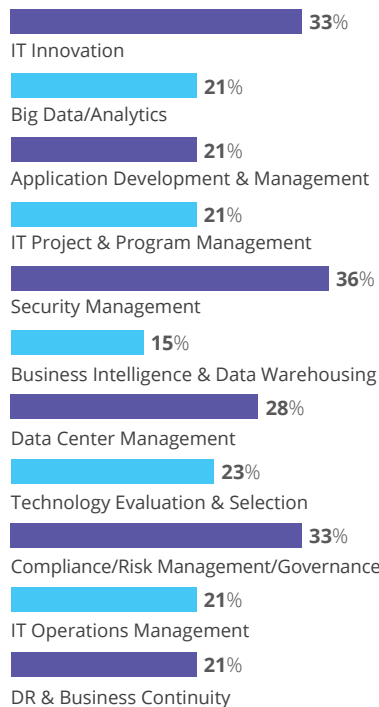

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MEET THE JURY

The NEXT100 Awards program draws on the expertise, contributions and support of India's CIO community. 39 senior executives from India's leading companies were involved in reviewing and validating the NEXT100 process, determining the selection criteria and interviewing the aspirants
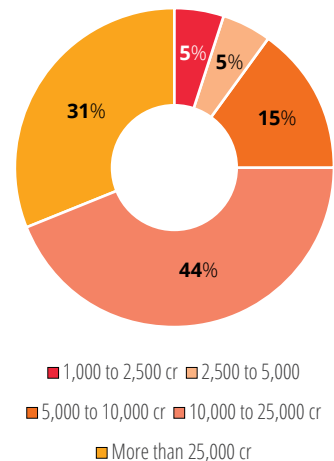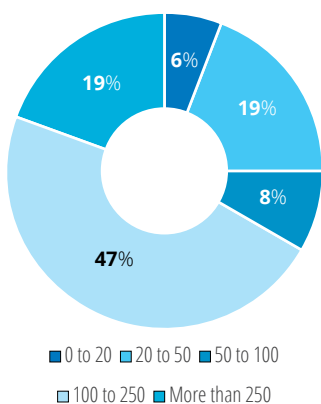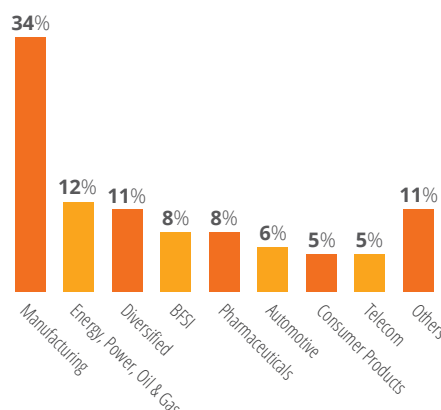
Business & Management Expertise

- IT Strategy & Planning — **54**%
- Project & Program Management — **49**%
- Budgeting & Financial Management — **31**%
- Vendor Management — **31**%
- Operations Management — **23**%
- Supply Chain Management — **13**%
- Human Resources & Talent Management — **13**%
- Training & Education — **10**%
- Customer Support & Service Management — **8**%

Technology Expertise

- IT Innovation — **33**%
- Big Data/Analytics — **21**%
- Application Development & Management — **21**%
- IT Project & Program Management — **21**%
- Security Management — **36**%
- Business Intelligence & Data Warehousing — **15**%
- Data Center Management — **28**%
- Technology Evaluation & Selection — **23**%
- Compliance/Risk Management/Governance — **33**%
- IT Operations Management — **21**%
- DR & Business Continuity — **21**%

Organization Size

- **5**%
- **5**%
- **15**%
- **44**%
- **31**%

■ 1,000 to 2,500 cr ■ 2,500 to 5,000
■ 5,000 to 10,000 cr ■ 10,000 to 25,000 cr
■ More than 25,000 cr

Total Work Experience

- **13**%
- **5**%
- **23**%
- **59**%

■ 21 to 25 years ■ 26 to 30 years
■ 31 to 35 years
■ More than 35 years

Team Size Managed

- **6**%
- **19**%
- **19**%
- **8**%
- **47**%

■ 0 to 20 ■ 20 to 50 ■ 50 to 100
■ 100 to 250 ■ More than 250

Industry Sector

- Manufacturing — **34**%
- Energy, Power, Oil & Gas — **12**%
- Diversified — **11**%
- BFSI — **8**%
- Pharmaceuticals — **8**%
- Automotive — **6**%
- Consumer Products — **5**%
- Telecom — **5**%
- Others — **11**%

Charts are based on analysis of profile of 39 jury members whose data was available

Rajamani Visweswaran Ashok
Vice President - Information Systems, Sundaram Clayton

Aravamuthan Balaji
President - IT & Digital, Emcure Pharmaceuticals

Sankarson Banerjee
Chief Information Officer, RBL Bank

Deepak Bhosale
General Manager - IT, Asian Paints

Subodh Dubey
Global Chief Information Officer, Suzlon

Rajeev Jorapur
Senior Vice President, Bajaj Auto

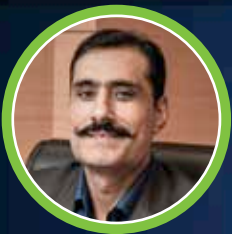**Pratap Pat Joshi**
CIO - MBC MO - Pune, Mercedes-Benz India

Kamal Karnatak
Group Chief Information Officer & Senior Vice President, RJ Corp

Alok Khanna
Executive Director - Strategic IS, IOCL

Vinay A Khargonkar
Vice President & Head - Corporate IT, Larsen & Toubro

Sanjay Kotha
Joint President - Chief Digital & Business Transformation, Adani Enterprises

Vinod Sivarama Krishnan
Chief Information Officer, Indus Towers

Manoranjan Kumar
Chief Information Officer, Shree Cement

Sumit Malhotra
Chief Information Officer, Times Internet

Umesh Mehta
Chief Information Officer, Jubilant Life Sciences

Sanjay Moralwar
Senior General Manager, Cadila Healthcare - Zydus Group

Rupesh Nain
Chief Information Officer - Natural Resources, Adani Group

Santosh Nair
Global Co-Lead & Digital Ambassador - Ecosystem Service (User Experience), Siemens

INDIA's FUTURE CIOs NEXT100 2021

Gyan Pandey
Global & Group Chief Information Officer, Aurobindo Pharma

Mahesh Kumar Pinnamaneni
Director - IT, Allanasons

Jayantha Prabhu
Chief Information Officer, Essar Group and Head - India Business, AGC Networks, Essar Group

Rajeev Pradhan
Chief Information Officer, Wadia Group

Atanu Pramanic
Chief Information Officer, Hindalco Industries

Ajay Rambal
Head - IT, LG Electronics India

Ritwik Rath
Chief General Manager - IS Strategy, Hindustan Petroleum Corporation Limited

Sumit Roy
Group Chief Information Officer, Jindal Stainless

Dhiren Savla
Group Chief Information Officer, VFS Global Services

Shiva Shankar
Vice President - Datacenter & IT Infrastructure, Network & Security, Reliance Jio Infocomm

Rajiv Sharaf
Head - IT, Torrent Power

Govind Singh
Chief Information Officer, Dalmia Cement Bharat

Dheeraj Sinha
Group Chief Information Officer, JSW Steel

VS Srirangarajan
Chief Information Officer - Pulp & Fibre Business, Grasim Industries (Aditya Birla Group)

Ananth Subramanian
Executive Vice President & Head - IT, Kotak Mutual Fund

Chetan Trivedi
Chief Information Officer, Hindustan Zinc

Rajesh Uppal
Member - Executive Board (HR, IT, Safety & Digital Enterprise), Maruti Suzuki India

V Vasudevan
Chief Information Officer, E.I.D Parry (India)

Ajay Prakash Vernekar
Chief Technology Officer, Aditya Birla Sun Life Insurance Co

Yogesh Zope
Chief Digital Officer & Senior Vice President, Bharat Forge (Kalyani Group)

● **Yashpal Baweja,** Senior General Manager – IT, Cummins India ● **Amit Bhardwaj,** Head of Product & Engineering (India Center), Boutiqaat ● **Tarun Bhardwaj,** Senior Manager, TATA Power Delhi Distribution ● **Amit Bharti,** Principal, Boston Consulting Group ● **Vikas Bhushan,** Associate Director – Technology, Synechron Technologies ● **Aakash Bhutani,** Assistant Vice President - Digital Transformation, DeHaat - Green Agrevolution ● **Pushpak Bisen,** IT Manager, Mercedes Benz India ● **Sudipta Biswas,** Senior Manager - Information Security & IT Infrastructure, Emami ● **Manish Chandegara,** Head - IT (CIO) & CISO Insulator Business, Aditya Birla Group (Grasim Industries) ● **Ripon Choudhury,** Manager, Bharat Heavy Electricals Limited ● **Abinash Das,** Competence Center Head - Enterprise IT, KONE ● **Rajendra Das,** Global Partner Relationship Manager - IT, Pernod Ricard India ● **Anilavo Datta,** General Manager - Head Data Analytics & Automation, Vodafone Idea ● **Rajesh Deshpande,** IT Head - Transformation, Tech Mahindra ● **Abhay Dhasmana,** Senior Consultant, HCL Technologies ● **Wilfred D'Souza,** Associate Vice President, Mphasis ● **Krishna Dubedi,** Principal Network Engineer, Finastra ● **Karthik Duddala,** Senior Director - IT, Regional IT Leader - India & APAC & Global IT VMO, Parexel ● **Rakesh Dwivedi,** Assistant Vice President & Head - Infrastructure Security, Jio Platforms ● **Srinivas Eticala,** Senior Vice President, Cloud4C Services ● **Mayank Gaur,** Senior Manager - Head IT Infrastructure, Energy Efficiency Services ● **Austin Gomes,** Associate Vice President - IT, Thomas Cook Group ● **Vikram Goswami,** General Manager - Digital Technology India Subcontinent, Carrier Airconditioning and Refrigeration ● **Sumit** Guha, Senior Manager - Cybersecurity & Infrastructure, Asian Paints ● **Harish Gupta,** Chief Information Technology Officer, Credit Guarantee Fund Trust for Micro and Small Enterprises ● **A Gurumurthi,** Assistant General Manager, K7 Computing ● **Violet Jemimah Haris,** Head IT & Digital, Sterlite Copper ● **Dattatraya Hebbar,** Tribe Head, Societe Generale Global Solution Center ● **George M Jacob,** General Manager - Team I/C Development, Portal & Cloud Initiatives, Bharat Petroleum Corporation Limited ● **Nikhil Jain,** PMO Manager, Analytics & Smart Manufacturing Lead, JCB India ● **Rakhi Jain,** Senior Technical Lead, HCL Technologies ● **Satyajeet Kakade,** Datacenter Operations Manager, Microsoft ● **Mohit Kalra,** Head - Information Security, Orix India ● Vikas Kapoor, Associate Vice President - IT Head Infrastructure, Future Generali India Life Insurance ● Kishore Karmakar, Vice President - Information Technology, IBC24 News ● **Sameer Khakhar,** Vice President - Information Communication & Technology, Shinhan Bank ● **Ali Khan,** Global Manager - Governance, Risk, Compliance & Audit, ZS Associates ● **Mohd Abid Khan,** General Manager, Samsung Data Systems India ● **Amit Khandelwal,** Global Program & Portfolio Delivery Head, Capgemini Technology Services India ● **Manish Kishore,** Head - IT (Group) & Digital Health, Andhra Pradesh MedTech Zone ● **Arvind Koul,** Head - IT Infrastructure & Security, Uno Minda Group ● **Murali Krishnan,** Associate Partner - Hybrid Cloud Transformation, IBM India ● **Ashish Kumar,** Vice President - Data Science, Salesken.ai ● **Ritambra Kumar,** Engagement Lead - Senior Service Delivery Manager, Capgemini India ● **Karthikeyan Kuppuswamy,** Delivery Manager, BORN Group ● **Mahendra Laungani,** Manager - IT, Amazon Seller Services ● **Srinivasan Mahalingam,** CISO, Fusion BPO Services ● **Subhashis Majumdar,** Principal Consultant, Tata Consultancy Services ● **Dipesh Malaviya,** IT Lead, Nivea India ● **Vikas Mandyal,** Deputy Regional Manager, Andritz Hydro ● **Ashish Mathur,** Senior Vice President, ValueFirst (A Twilio Company) ● **Susil K. Meher,** Head - Health IT, AIIMS, New Delhi ● **Pragyan Mishra,** Assistant General Manager - Digitalization, Linde Engineering India ● **Priyesh Mistry,** Assistant General Manager - QA, Ajanta Pharma ● **Varun Mitra,** Technology Lead - Customer & Consumer Apps, GSK Consumer Healthcare ● **Chandrasekaran Muthappan,** Head - Central Planning, Ashok Leyland ● **Pravin Naidu,** Assistant General Manager - Systems, Shalby Hospitals ● **Anupkumar Nair,** Head – IT, SRL Diagnostics ● **Romi Narang,** Global IT Lead - Supply Chain Planning, Unilever ● **Ankit Nathani,** Deputy Manager (MS), Krishak Bharati Cooperative Limited ● **Deveshri Patel,** Head of Data Management, Adani Enterprises ● **Ravishankar Patel,** Assistant Manager, L&T Smart World ● **Shiv Shankar Patnaik,** Co-founder, Redeminds ● **Vijay Pillai,** Senior Program Manager, Gadgeon Smart Systems ● **Abhishek Prasoon,** Project Head, Coforge ● **Trupti Purandare,** Head - Infrastructure & CISO, Godrej Housing Finance ● **Saumil Purani,** Deputy Vice President - IT, Axis Bank ● **Narayana Rajashekar,** Infrastructure Architect, Kyndryl ● **Logesh Rajendran,** Senior Architect - Cloud & DC Infrastructure, L&T Smart World ● **Lakshmanan Ramanathan,** Senior Delivery Manager (Head - Delivery, Technology Solutions & Automation Group), Infosys BPM ● **Prakash Ranjan,** CISO, Navi General Insurance ● **Pawan Roy,** General Manager - IT, Birla Corporation ● **Varun Sadekar,** Assistant Vice President - IT, Bajaj Allianz General Insurance ● **Ashok Pradop** Sahadevan, Director - Global Support, Capgemini Technology Services India ● **S Saravanan,** Deputy General Manager - IT, Karur Vysya Bank ● **Vishal Sareen,** Manager - IT, Mahindra & Mahindra Financial Services ● **Pankaj Shah,** Senior Project Manager, TietoEVRY ● **Umang Shah,** Vice President - Product & Technology, Svatantra Microfin ● **Anoop Sharma,** Assistant Vice President - IT, Genpact ● **Chandramauuli Ramcharan** Sharma, Head - IT, Adani Estates Management ● **Munish Sharma,** Global Head - IT Infrastructure Management Services & Digital Transformation, ACL Digital India ● **Parish Sharma,** Senior Manager - Agile Delivery, Diebold Nixdorf ● **Puneet Sharma,** Senior Manager - IT, Bharti Realty ● **Saurabh Sharma,** Assistant General Manager, Bennett, Coleman & Company ● **Shivkant Sharma,** Senior IT Security Engineer, RxLogix ● **Yatish Shivaprasad,** Director & Head of Corporate Functions Technology, India & Romania, Societe Generale Global Solution Center ● **Balwant Singh,** CISO, Dharampal Satyapal ● **Ramanjeet Singh,** Associate Director, Incedo Technology Solutions ● **Ravi Singh,** General Manager - Global IT Infra and Information Security, IGT Solutions ● **Rohit Sinha,** Principal Architect, T-Systems ICT India ● **Radhakrishna Sripathi,** Vice President & Head - Global IT Operations, Infosys ● **Rahul Surve,** DGM - IT & Digital Solutions, JSW Steel ● **Rohit Taru,** Head - IT, Hafele India ● **Kasiraja Thangapandian,** Senior Engineering Manager, Visteon ● **Prakash Tripathi,** General Manager - IT, Shyam Steel Industries ● **Aniket Vaidya,** Project Consultant, Wipro ● **Arun Venkataraman,** Solution Consultant, Tata Consultancy Services ● **Gaurav Virmani,** Head - Program Management & Design Operations, Aristocrat Technologies India ● **Nainesh Vyas,** General Manager & Head - IT, Century Enka ● **Akanksha Yadav,** Manager - IT, Maruti Suzuki India

atulations

JURY SPEAK

"The NEXT100 Awards provide a perfect platform for next-gen IT leaders to achieve the next level of success. This can motivate them further, boost their learning, re-skill them and ensure they achieve business goals by understanding business needs and adopting the latest technology."

Gyan Pandey
CIO, Aurobindo Pharma

"It is good to see young, energetic individuals winning the NEXT100 Awards. The selection process is very rigorous. So it is heartening to see the right talent come through this with new ideas and people working in new areas of IT."

Nirita Bose
Senior Vice President & Head - IT, Axis Asset Management Co

"The NEXT100 is a great program and its quality is improving every year. The expectations are also increasing with that. We expect the next-gen IT leaders to have a good understanding of the business needs and measure their work on a regular basis through metrics."

Puneesh Lamba
CTO, Shahi Exports

"The NEXT100 Awards have been an enriching experience, right from start to finish. Some of the other awards like CIO Summit are project-driven but the NEXT100 has taken into account comprehensive traits, which are not only about what you know, but also what your insights are. So this inside-out approach is the most fullfilling part of it."

Avadhut Parab
Associate Vice President & Head - IT, Wockhardt
(NEXT100 Winner 2018)

"The NEXT100 Awards is a tremendous platform where technical guys like us can meet, learn from each other, and share our knowledge & experience."

Gagan Chopra
Assistant General Manager, JSW Steel
(NEXT100 Winner 2018)

WINNER SPEAK

"The platform provided to us by NEXT100 has been amazing. It is certainly very encouraging to aspiring CIOs and future IT leaders. This will also enable winners like us to focus on and contribute more to our organizations."

Rajendra Bhandare
Vice President – Technology, IDFC Securities
(NEXT100 Winner 2018)

"The entire NEXT100 program is very exciting. It is a platform for me to meet my peers and learn about emerging technologies. It propels our career in the right direction. Moreover, the program is extremely well-organized."

Shini Saju
Manager, JSW Steel
(NEXT100 Winner 2018)

INDIA's FUTURE CIOs

NEXT 100
2021

Thank you!

From all of us at ITNEXT, a sincere thanks to our partners for their invaluable support in making the

NEXT100 2021 AWARDS

a great success

An Exciting Year Ahead For Enterprise Storage In 2022

Containers and Kubernetes are the driving force behind how the industry is reinventing the way we build and run applications, fueling enterprise IT efficiency, and their popularity will only continue to expand in 2022

By Matthew Oostveen

2022 will be the year of recovery as countries around the world come to terms with COVID-19. Business travel will pick up, face-to-face meetings and confer- ences will be back on the agenda, and companies will accommodate a hybrid workforce split between work in the office and work from home. But what do we expect to see in the world of enterprise storage?

Containers will be a competitive differentiator
Let me first address what is topmost on the minds of CIOs, Digital Trans- formation. This will only accelerate in 2022, but not only that, the focus will

be on finding those competitive differentiators that will allow companies to stand out from their competitors. One way they will do this is through more significant investment in technologies such as containers and Kubernetes. They will look to develop bespoke cloud-native modern apps and containerized microservices.

Containers and Kubernetes are the driving force behind how the industry is reinventing the way we build and run applications, fueling enterprise IT efficiency, and their popularity will only continue to expand in 2022. For example, the number of start-ups in the application of Kubernetes in the security space will increase in line with a general focus on vulnerability management and reporting capabilities.

Modern data protection

This brings us to our second expectation for 2022, which is also a top priority for CIOs, protecting the company's data assets. Information security is not a new issue, but we've seen a rise in the number of ransomware attacks in the last two years of lockdowns, which presents a new challenge for CISOs (Chief Information Security Officers). No longer is it enough to ensure you have a comprehensive security infrastructure. You also need to ensure that you keep immutable copies of your data and have the means to rapidly restore that data in the event of a ransomware attack.

We're also seeing pressure now from Boards of Directors and governments to ensure that organizations don't give in to ransomware demands. As a result, we see a "Trust Infrastructure" start to emerge to address identity issues in the digital space, potentially through the use of immutable technology such as blockchains and security certificates.

Cloud everywhere

The need to move faster is one of the key reasons why organizations embrace cloud operating models everywhere, including on-premises. Running everything using a cloud operating model enables them to automate their operations, creating a flexible infrastructure that provides their organizations with on-demand access to data services.

As a result, we expect to see more automation and orchestration tools enabling organizations to seamlessly deploy cloud operating models. We also see subscription services models become the norm to enable greater velocity. Companies will become more nuanced in their approach to technology adoption. For the non-core parts of their business, they will opt for speed, resilience, and simplicity and opt to consume those technologies as a service to focus most of their effort and capital investments in core areas.

Technology adjacencies

Now let me address adjacent areas that will impact storage indirectly. The first is data moving more towards the edge. As we move toward 5G and beyond, the Internet of Things and connected ecosystem will result in even more data to be generated and collected at the edge. This will require a robust distributed IT infrastructure that can manage and protect data centrally and at the edge. Large volumes of primarily unstructured data are collected through billions of sensors to provide companies with greater insight into the business.

Another adjacent area is the emergence of Web 3.0. The introduction of Web 2.0 transformed the internet from largely static web content to interactive experiences and user-generated content brought about by the emergence of mobile, social, and cloud.

We are witnessing the next paradigm shift to Web 3.0 built upon the three foundational layers of edge computing, decentralized data networks (such as Blockchain), and AI. Web 3.0 will enable distributed users and machines to interact with data and value using peer-to-peer networks without 3rd parties, thus shifting data ownership to an open, trustless, and permissionless framework.

We're also seeing pressure now from Boards of Directors and governments to ensure that organizations don't give in to ransomware demands. As a result, we see a "Trust Infrastructure" start to emerge to address identity issues

More innovations ahead

2022 will be an exciting year for technology as the world becomes increasingly digitalized. There are exciting new areas of technology, some of which may catch us by surprise, for example, neuromorphic computing, and I would be remiss, not to mention the metaverse. Strap yourselves in and prepare for a wild ride in 2022. ■

The author is VP & CTO, Asia Pacific & Japan, Pure Storage

Empowering Hybrid Workforce Through Smarter Tech

All the businesses worldwide are identifying new ways and harnessing cutting-edge technologies to enable their workforce to accomplish a high level of productivity

By Gaurav Aggarwal

I n the last two years, due to the COVID-19 pandemic, most businesses had to shut down their offices and set-up remote working environments for their workforce. But, as the pandemic subsides, everyone is exploring the possibility of a middle path — between going to office regularly and working from home. And that's how the new hybrid work models are emerging.

All the businesses worldwide are identifying new ways and harnessing cutting-edge technologies to enable their workforce accomplish a high level of productivity.

Metaverse

As we all know, the metaverse is powered by the combination of virtual reality and augmented reality. It is real-time, infinite, persistent, interoperable, and more. The critical feature or the advantage of working in the metaverse is overcoming

the challenges you face during remote work. Some challenges and tasks are better solved visually than theoretically, but that's quite impossible with remote work. Metaverse allows you to work in a virtual environment and interact with coworkers in a much efficient way.

Digital Fluency

Due to the relatively new work from home concept, everyone is exposed to computers and not tech-savvy. That's why the digital fluency program will enable the workforce to leverage the latest digital toolsets securely. With the help of the digital fluency program, employees will be more comfortable with working from home as they will not have to face technical problems daily.

Audio and Video enabled Unified Communication

The audio and video-enabled communication channels like Zoom and Microsoft Teams play a very crucial role. Today, they have understood the importance of employees' needs, and they have several features That can be helpful for employees while attending meetings. Not only audio and video-enabled communication channels but instant messaging tools are equally important because we will not have video meetings all the time.

Secure Home Office

Every employee is going to spend most of their time behind screens doing work. That's why they need a perfect and secure home office setup. An ideal home office setup should include a monitor, ergonomic keyboard and mouse, and a comfortable desk and chair. If an employee has a secure home office, then the productivity level will increase. A proper office-like setup will motivate the employees to work more effectively.

Remote Access using Virtual Desktop

As in work from home, we don't have direct access to other computers.

That's why remote access with the help of virtual desktop infra or direct access through app gateways is an essential part of the work from home concept. Remote access using virtual desktop infra can be helpful in situations where someone is not able to rectify any error. In such scenarios, a technical person can help with remote access using virtual desktop infra or app gateways that the company has developed.

Mindfulness tools

One of the most significant downsides of working from home or remote is that people are exposed to excessive screen times and endless online meetings. As a result of that, employees have started to experience a sharp drop in productivity. That's why businesses need to invest in mindfulness tools. These kinds of tools will help employees to maintain their mental wellness.

Composite AI solutions

To increase employees' productivity in work from home or remote work environments, composite AI plays a crucial role. With the help of some AI-based tools, we can get real-time data that will show us how much time has been spent on which activities. These tools

will guide the employees on whether they should reschedule or decline an invitation to a meeting to focus on other essential tasks.

Activity Driven Apps

As the situation of the covid-19 pandemic is now settling down, many employees want to attempt their office. That's why businesses should provide a safe return to office platforms. To ensure a safe return to office platforms, companies should conduct contact tracing, and they can also offer office seat booking apps with which employees will be able to book their seats in the office.

Online Team activity

Due to work from home and remote working concepts, the social fabric has been damaged. That's why businesses should learn and invest in online team activity platforms, where employees can get to know each other and have some sense of bonding. These kinds of online team activity platforms will help businesses to build a more robust social fabric. ■

The author is Vice President & Global Lead - Everything on Azure Solution Strategy & GTM at Avanade

Capturing New Opportunities Through Digital Transformation

India's data price, accessible smartphones, and low-cost, high-speed internet have propelled its digital transformation

By Muralidharan VM

I n the '90s, the liberalization was a proactive step that helped India accelerate its economy and the Information Technology boom. Now the pandemic has a providential opportunity that we must not miss out, and accelerate the pace of transformation through an already robust digitization wave. It is more than a decade of Aadhaar – the biometric digital identity program, and our familiarity with online digital transactions has already put us on a digital-first trajectory.

Thanks, perhaps, to this grasp of digital, Indians clocked a whooping INR 7.71 lakh crore worth of UPI transactions in October this year. Our digital prowess was not limited to digital payments alone. We used apps to buy groceries, consulted with physicians using our devices, and continued learning while locked down in our homes. What has been a pleasant surprise is the fast absorption in the urban populace.

Arguably, India's data price, accessible smartphones, and low-cost, high-speed internet have propelled India's digital transformation. Citizens,

businesses, and governments have substantially increased the adoption of digital applications during the last 18 months, making India the second-fastest digital adopter among 17 major digital economies. What does this mean for India's economy?

Creating opportunities

When we embraced digital, we changed the way we consumed information, interacted with brands, and recalibrated how we worked. Sectors like IT and IT-BPM, for their part, adapted to meet the world's digital transformation needs. And Work-from-Home made it a profitable adoption, with work taking the employees to the country's remotest corners.

This also increased the pace of upskilling through online courses. Having high-skilled emerging technology talent – and a talent pool that is vigorously investing in upskilling, this sector is estimated to contribute 10% to the country's GDP by 2025. To put things in perspective, a 1% rise in GDP can create 7,50,000 new jobs. But is this an ambitious goal? No.

An online training provider reported a 200% year-wise growth from 2019 to 2021. Driving this surge was the demand for Data Science, AI, Cloud, Programming, and Analytics courses catalyzed the Fourth Industrial Revolution. To keep up with the pace, corporates have almost doubled their in-house learning investment to create a future-fit talent pool.

Digital transformation catalyzes a shift in business processes, customer expectations, operation models, and employee experience, opening up several avenues for growth.

Pushing the pedal on Industry 4.0

It was interesting to witness even traditional sectors boldly embrace digital transformation in the last two years. Burgeoning e-commerce growth stimulated the logistics sector, a tech laggard. Futuristic supply chain solutions will use IIoT, sensors, and other digital

Governments are resetting their strategies to enhance citizen experience. Future-fit enterprises are recalibrating their processes

technologies to assess, track, monitor, and manage end-to-end logistics operations. Automated from start to end, they will help logistics owners improve performance and meet customer expectations. Real-time monitoring of assets has proven to reduce fuel costs, optimize load management, improve vehicle maintenance, and safeguard assets and people from accidental damage and deterioration.

Financial service was another traditional sector that swiftly scaled the user population through the necessity inflicted on the customers during the pandemic. Often under the impression that digital transformation is distrustful, complex, and expensive, this sector was the opposite of digital-first. The pandemic, however, changed this notion. Contradicting apprehensions that digitization might inconvenience analog-native customers, it brought customers closer. When even everyday activities moved online, chatbots, video KYC, cardless cash withdrawals, tap and pay options improved customer satisfaction during the lockdown.

In today's digitally mature market, banks are competing not just with other banks, but also with a growing fintech sector. Digital transformation will help banks enhance their

customer experience. Similarly, emerging technologies will unlock value from non-core digital sectors like healthcare, education, energy, and agriculture. Data Science and AI will help these verticals mine actionable insights from data, and create unique, customer-specific journeys.

The way forward: Strategic allies and digital highways

Governments are resetting their strategies to enhance citizen experience. Future-fit enterprises are recalibrating their processes to improve stakeholder experience. They're looking at digital transformation for value creation. Aspiring future-fit enterprises will start looking outside the organization for allies while building on their existing capabilities. Strategic external partners will help enterprises leverage emerging technologies to enhance customer experience, improve productivity, optimize operations, and ultimately increase bottom line growth.

According to NASSCOM, open digital ecosystems will unlock more than USD 700 billion worth of business opportunities for India by 2030. Equipped with an expanding population of STEM graduates, a strong private sector, and an enthusiastic entrepreneurial ecosystem, more importantly, an exponentially growing start-up community, we might well be on our way to a trillion-dollar economy.

However, the need of the hour is a well-funded digital highway plan to support our technology transition. The United States spends USD 160 billion on digital infrastructure, the UK spends USD 35 billion, and China spends USD 60 billion. India, on the other hand, spends merely USD 13 billion. A concerted effort from private and government institutions will ensure every citizen, village and enterprise, is connected and equipped to reap the benefits of digital transformation. ■

The author is Chief Operating Officer, Bahwan CyberTek

How Emerging Technologies Have Fueled The Growth Of The Indian Economy

The Indian economy is influenced by economic and market conditions in other countries, particularly emerging market conditions in Asia

By Piyush Somani

The Indian economy started the decade of 2010s on signs of high growth, fueled by early recovery and limited effects on output from the financial crisis of 2008-09. From a robust growth of 9% in 2010, the economy slowed to a modest growth rate of 4.5% during 2019. The share of sectors contributing to GDP has also changed, with the services sector contributing 49.4% to GDP and the contribution of agriculture and industry sectors falling to 16.0% and 27.3%, respectively, in 2019.

Role of Emerging Technologies
The cloud services market's growth in India is driven by the increasing adoption of big data, Artificial Intelligence (AI), and the Internet of Things (IoT). IoT connects multiple devices or appliances that need to be connected to the internet, including automation and real-time device control. IoT connected devices such as household appliances, connected cars, and elec-

tronics use a cloud-based backend to communicate and store information. AI Technology is being embedded into IT infrastructure to streamline work-loads and automate repetitive tasks. Companies use cloud infrastructure to collect, store, process, and analyze the bulk of data required for AI tools and applications. The surging adoption of Big Data in India is also leading to the growth of the cloud services market as cloud infrastructure allows for real-time processing of Big Data.

■ **Cloud Services** - Indian public cloud services spending is expected to grow at a CAGR of 29%, from INR 384 Bn. in 2020 to INR 1,103.4 Bn. in 2025

■ **IoT** - The IoT market was estimated at USD 9 Bn. in FY20 (as per projections made in 2016)

■ **Big Data and Business Analytics** - Big Data and business analytics revenue were estimated to be valued at USD 4 billion in 2019, up from USD 2 billion in 2016, with growth at a CAGR of 25%. The growth, driven primarily by IT/ITes, has increased the demand for data storage space (Data Centers)
Besides the growth of these technology markets, the Government of India is also looking to invest INR 3660 crore in establishing an Emerging Technology Innovation Hub.

Factors Impacting Growth of Emerging Technologies

1. **Increase in wireless data subscribers** - India's total number of wireless subscribers has been an overall increase. We have witnessed a significant increase

Industry Value/ Technology	Global (USD Bn.)	Global (INR Bn.)	India (USD Bn.)	India (INR Bn.)
Internet of Things (IoT)	300	22,287.00	15	1,114.30
Big Data	56	4,160.20	2	148.6
Artificial Intelligence	29.9	2,218.30	0.4	29.2

in the proportion of wireless data subscribers concerning the total number of wireless subscribers. The cloud services market in India was undergoing a cloud transition phase, which got accelerated by the perpetuation of COVID-19 in 2020. During the first quarter of 2020, enterprises' spending on cloud infrastructure increased by ~35%, compared to the fourth quarter of 2019. The adoption of "Work from Home" shift from office set-ups to virtual work generated the urgent need for secure, reliable, scalable, and cost-effective technology services across the country. SaaS has been a huge support for the sudden increase in the mobile workforce in 2020. The Indian cloud infrastructure witnessed a y-o-y growth of around 15% by the end of 2020.

2. **Increased mobile and internet penetration** - On average, Indians used 13.5 GB of data per month in December 2020, owing to an increase in data subscribers and consumption of mobile-video content. The data consumption is expected to double to 25 GB per month per user by 2025, fueled by the introduction and adoption of 5G, change in working patterns,

augmented consumption of mobile-video content led by COVID-19, and affordable pricing. It is also expected that mobile data traffic per month will grow at a CAGR of 23%, from 4.6 exabytes in 2018 to 16 exabytes in 2024.

3. **Fast growing OTT market** - India is currently amongst the world's fastest-growing OTT (over-the-top streaming) markets. The high growth of OTT in rural markets is also expected to increase.

Overview of Indian IT/ITES Sector

One of the predominant factors that have resulted in the increasing value contributed by the services sector to the GDP is the IT/ITes sector, which is valued at USD 45 billion (domestic revenue) and USD 150 billion (export revenue) end of Fiscal 2021. As of 2020, India's IT workforce accounts for 4.36 million employees. It is fur-ther expected that IT spending in India could reach USD 93 billion in 2021 (7.3% growth year on year) and further increase to USD 98.5 billion in 2022, driven by rapid digitization and the IT industry's timely move to remote working environments. This helped them to keep up the industry's growth amid the COVID-19 pandemic. It is forecasted that the contribution of the IT industry to India's GDP will reach 10% by Fiscal 2025. India is one of the largest data generators currently, with a growing young and tech-savvy population. Digital consumption data in India was around 40,000 Petabytes in 2010; it has likely shot up to 2.3 million Petabytes towards the end of 2020, which is twice the global rate, as per a report by ASSOCHAM.

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IT Industry Driving India's Economic Growth

In 2020, India ranked 63rd among 190 economies in terms of ease of doing business, ascending 76 positions from its all-time low position of 139 in 2010. India is one of the top offshoring destinations for IT companies worldwide. In FY'2021, India was the 5th highest FDI recipient nation, up from the 8th position in FY'19. Some of the key growth drivers of the IT industry in India are – low cost of operations, supportive govt. policies, availability of skilled workforce, surging demand for IT-related technologies like Cloud Computing, Digital Payments, IoT, developments in Telecom and BFSI, etc. and export demand growth.

The role of cloud and data center Industry

In July 2015, the Government of India flagged off the 'Digital India Program,' with a vision of propelling the efforts to transform India into a digitally empowered society and knowledge economy. Further, it was envisaged that the digital ecosystem could generate an economic value of USD 1 trillion, which would play a crucial role in achieving the USD 5 trillion economy target by 2025. As part of the program, the Government identified 30 digital themes across different sectors such as agriculture,

Source: Industry Articles and Ken Research Analysis
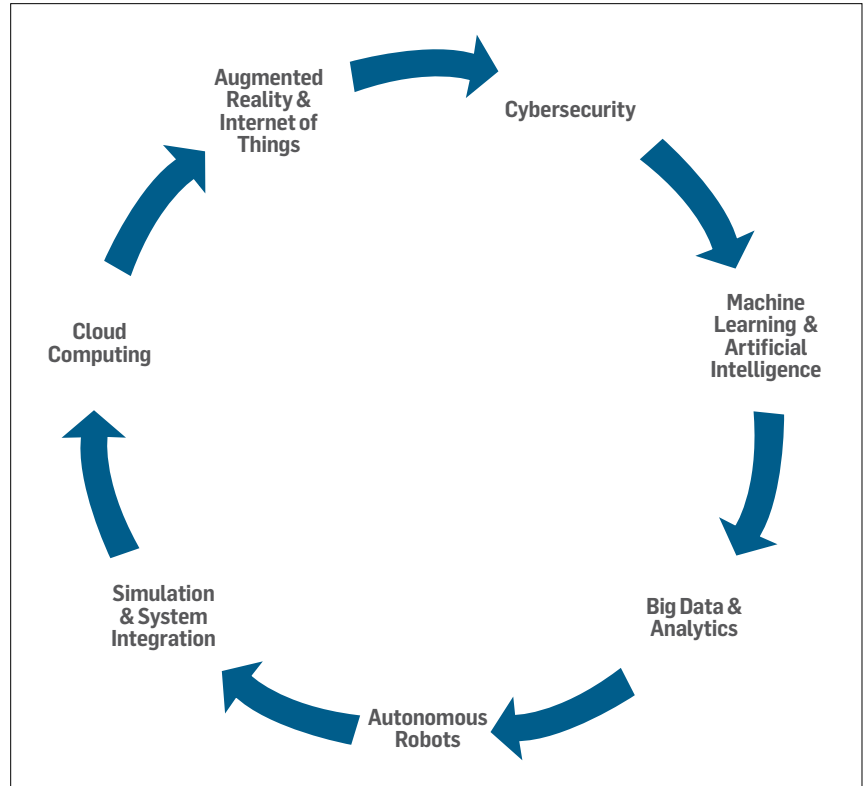
Key Technologies Shaping the "Digital Transformation of India" in 2020

healthcare, education, energy, digital payments, etc. This relies on a 21st century IT/ITES, highlighting opportunities for increased adoption of digital technologies.
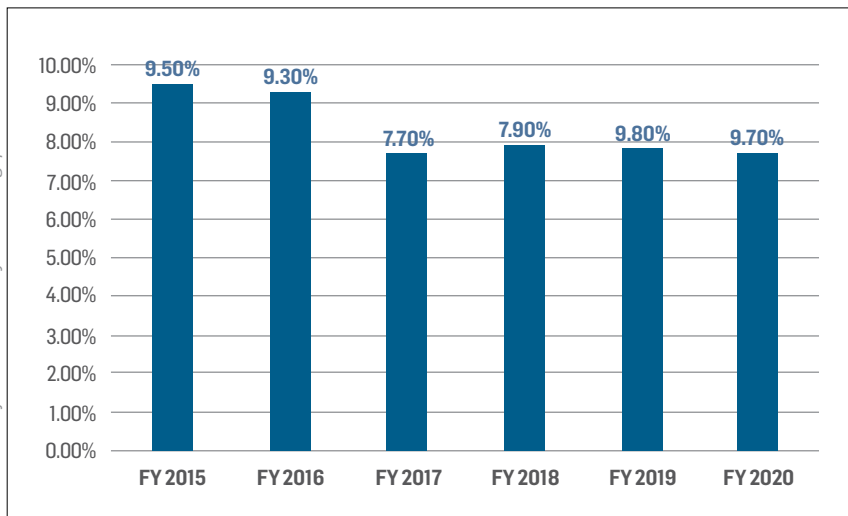
The wave of IT adoption led by Cloud Computing has allowed firms to transform the backend operations,

resulting in an enhanced value proposition for the customers. Cloud service gives companies of any size access to technological capabilities previously accessible to large enterprises only. In India, the industry has gained momentum with more than 200 Data Centers and more than 10 Cloud operators, targeting an industry market size of USD 3.8 billion in Fiscal 2020.

Conclusion

The Indian Economy is also influenced by economic and market conditions in other countries, particularly emerging market conditions in Asia. Emerging technologies & their adoption have grown rapidly with time and have contributed significantly to the Economy. Various government policies and initiatives have driven technology adoption across industries. ■

Source: https://www.statista.com/statistics/320776/contribution-of-indian-it-industry-to-india-s-gdp/

Share of IT/BPM Sector in Indian GDP

The author is Managing Director & Chairman, ESDS Software Solution

Criminalizing Cybercrime And Raising The Risk For Cyber-Attackers

Dealing with the relentless and mass scale of cybercriminal activity against businesses and individuals will be an international effort across both the public and private sectors

By Dave Russell

Over the past few years, cyber-attacks have become something that the general public is increasingly aware of. However, a perception still exists, indeed, outside the IT industry. These cyber-attacks are just something that

happens on the Internet. It isn't easy to relate to and equate the impact of cybercrime on its victims – whether it's an individual who has fallen foul of an online scam or a company that has been forced to pay a ransom to restore its systems. For this reason, it doesn't always seem that cybercrime

is viewed or treated like a 'real crime.'

While we acknowledge that cybercrime is an actual crime, it might be not easy to get on board with for some. The thought of being outraged by a hacker taking down a multinational corporation could seem a bit farfetched. This is possible

because of the stereotypes about cybercriminals being painted as disgruntled computer science whizz-kids with nothing better to do than 'stick it to the man.'

Consider that most cyber-attacks are the work of huge, organized, and wealthy crime syndicates. They are highly sophisticated operations to steal money from the business that pays your salary and the government that collects your taxes. Does that sound like a crime?

Are we guilty of victim-blaming?

The fact is that cybercrime is an actual crime, and businesses that fall foul of it are victims. They have suffered a crime committed against them. However, the level of sympathy towards organizations that get breached differs from what we give to an individual. If someone tells you they've been hacked, had personal information compromised, and stolen money, your natural reaction probably isn't to say it's their fault. However, cyber breaches are a source of lasting reputational damage to businesses. We tend to assume they did something wrong or acted carelessly. As somebody who has worked in the data protection industry for over 32 years, I would tend to agree with this.

The vast majority of cyber incidents are avoidable due to organizations failing to follow best practices, poor digital hygiene, and/or outdated or unpatched software.

However, is there any other type of crime that focuses almost exclusively on blaming the victim and so little on bringing the criminals to justice? Businesses are viewed as the guilty party rather than victims, and it is accepted that the criminals are unpunishable due to the lack of an agreed global legal framework and justice system. If a criminal from another country travels to the USA, for example, and commits a crime against a business on American soil, there is an entire diplomatic process to ensure this person is

Finally, never pay the ransom. Organizations who pay ransoms feed the 'easy pay day' perception, which means cybercriminals keep doing it. As soon as businesses stop paying ransoms, we'll see a reduction in the popularity of ransomware as an extortion technique

brought to justice and the victim is compensated. This isn't the case when it comes to ransomware.

International and intercontinental cooperation is the only way to create an environment where the risks are higher than the rewards for cyber-attackers. The scourge of ransomware accelerated during the pandemic, increasing the appetite of government and business leaders to break the geopolitical impasse that has enabled cybercriminals to run riot. But it won't be easy, and a workable holistic solution is still years away.

Learn self-defense

In the absence of a justice system that completely protects us from the bad guys, basic human survival instinct demands that we learn to defend ourselves. In the context of cybersecurity, that means focusing on a few fundamentals. Firstly, every enterprise needs a dedicated IT security lead with access to business leaders and the authority to lead the security ini-

tiative. You need to have a resource with designated responsibility for cybersecurity and specialize in data protection for smaller businesses. Secondly, businesses need to practice impeccable digital hygiene.

This includes mandatory training for all employees to recognize potential attacks, understand whom to report them to, and understand why this is important. The more people buy into the need for good digital hygiene, the more alert and willing to take the blinkers off they become.

Finally, never pay the ransom. Organizations who pay ransoms feed the 'easy pay day' perception, which means cybercriminals keep doing it. As soon as businesses stop paying ransoms, we'll see a reduction in the popularity of ransomware as an extortion technique. While businesses who suffer cyber-attacks are victims, they are responsible for protecting any data they use, process, and store. Paying off cybercriminals to get systems back online is an unsustainable defense strategy.

As governments become more active in preventing the spread of ransomware, we may see businesses who do so investigated and reprimanded by independent regulators.

Dealing with the relentless and mass scale of cybercriminal activity against businesses and individuals will be an international effort across both the public and private sectors. While it is important that cybercrime is properly 'criminalized' and that the perpetrators are brought to justice, businesses must understand the responsibility they have to their customers and employees to protect any data within their jurisdiction. This can only be done by implementing a Modern Data Protection strategy that combines effective front-line cybersecurity defenses with a comprehensive data backup and disaster recovery approach. ■

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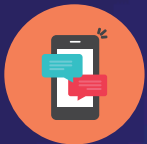# Here is your chance to become a Digit certified tech influencer

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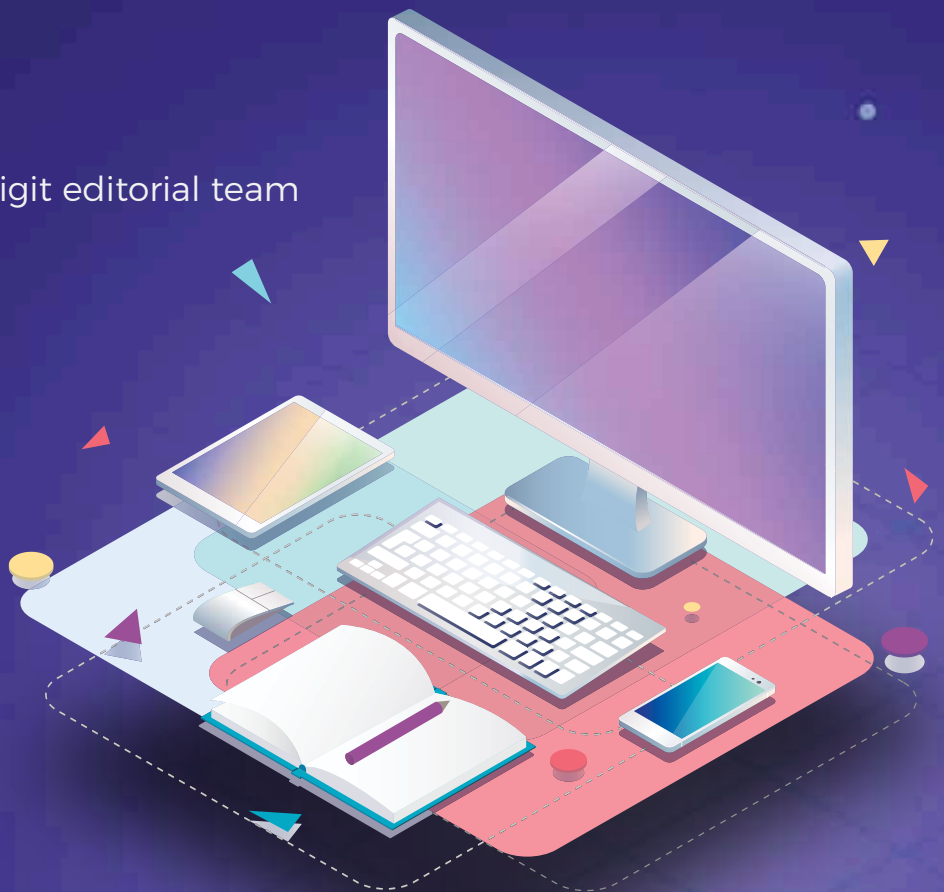
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