



**Tholons Global
Innovation Index™
2020**

INNOVATION AT SCALE

Digital Nations & Super Cities

**TOP
100
SUPER
CITIES**

**TOP
50
DIGITAL
NATIONS**

Avinash Vashistha
Chairman & CEO
Tholons Inc.



"The world has seen major global crisis right from the great depression of 1931, to the dot com bust in 2001, the financial meltdown in 2008 and the biggest of all, the Covid pandemic in 2020. These are times when leaders need to take care of the present, focus on recovery, get returns in less than six months and prepare for resiliency in the future. There are numerous examples of winners that should give us the motivation and sense of aggression for action."

Fabrizio Operti
Chief
Trade & Investment Div
IDB



"The global crisis of the pandemic has accelerated the efforts of Latin America and the Caribbean's (LAC) countries towards digital transformation in order to adopt measures for cybersecurity, privacy and cross-border e-commerce and data flows."

Kerry Hallard
President & CEO
Global Sourcing
Association - UK



"In light of current challenges, GSA is supporting the industry to not just help companies and governments keep the mics on but really carry on delivering in the most difficult times. It is essential and an imperative to deliver services. Innovative and intelligent solutions is a critical part of our industry."

Richard Jones
Chairman
Captivate Associates - UK



"As a description of our current times, 'extraordinary' seems an understatement. Never has iA, Intelligent Automation's, speed to value been more important. Reducing cycle time, increasing certainty of outcome and controlling risk are the universal goals now. By sector, just about everyone will need to pivot into the new world and perhaps, amazingly, health will burst through into the top tier of iA. Finding the capability and capacity to travel this journey is where this report brings critical insight."

Kitade Y
Managing Director
Global Initiative Inc
Japan



"The world is seeing a major crisis right now. We are living in a very dynamic and exciting world, where the challenges and opportunities are immense. Let's go out there and re-design the experience, embrace innovators and drive change for success of enterprises."

Dawn Tiura
President & CEO
SIG



"The world has proven itself to be smaller & more interconnected than we might have realized. I feel that this is a test of leadership as well as a test of people's character. In these uncertain times, business leaders must be ready to help others overcome fear, create a new future and get through the adversity, social change and business disruption that the crisis has wrought. With technology, the adoption of change should happen faster now, but leaders must support that change, believe in it and live it. Accelerating digital transformation is key to success."

Debjani Ghosh
President
NASSCOM



"It has been a challenge for the entire industry. Employee safety, client business and well-being are utmost important. As India strives to carry on 'business as usual' while battling the devastating global outbreak as well as its economic fallout, the IT sector is leading the way with solutions for remote innovation and collaboration. Easing of compliance norms for 'work from home' for IT sector, innovation in the times of self-isolation, fears of large-scale job losses in the impending recession and India Inc.'s efforts to support the war on Covid-19."

Jonathan De Luzuriaga
President
PSIA/IBPAP



"Now, more than ever, it is imperative for Cities & Countries to embrace Digital. The effects of the pandemic has highlighted the strengths & weaknesses of nations in transitioning to the new business environment. The TSGI has become an essential framework that the Philippines is utilizing to measure the nation's readiness & capabilities in providing the world class service that the country is known for. It has become the barometer to identify strategies & initiatives to further the country's intention to develop other locations to become suitable for IT-BPM Services. It destroys the myopic view of merely benchmarking within the nation & provides industry leaders with a more global perspective of digitalization & innovation."

Michael Barrett
Professor
IT & Innovation
University of Cambridge



"Every leader must engage with visionary businesses to deploy an innovative AI driven intelligent automation solutions. It is the fiduciary responsibility to your employees, customers, families and your business to act NOW."

Andrew Wrobel
Chief Strategist
Emerging Europe



"Europe has been battling the crisis since the end of January, and it is clear that it has changed our lives in an unprecedented way. This has given us an opportunity to engage through insights & intelligence designed to help entrepreneurs, investors, governments & all knowledge-seekers navigate emerging Europe, which in quite a few cases has handled the pandemic well so far. Innovation & technology will drive sustainable socio-economic growth."

Ankita Vashistha
Director
Investments & Innovation
Tholons



"Businesses have embraced AI and work from home as the NEW NORMAL. Most of the processes should be done through AI and digital workers rather than only human workers. There are many intelligent solutions available that are driven by AI. Bringing in AI driven innovative solution is a must. The industry should make 'Innovation at Scale' a business imperative."



Tholons Global Innovation Index - 2020

Tholons Global Innovation Index is the leading touchstone to benchmark the accelerated digital transformation of industries and services globally. The index evaluates ranks and provides location strategies to multinational corporations, countries, governments, multi-lateral agencies, analysts and investors. Digital is a critical element in transforming industries globally. Technology, Business process management companies and multinational corporations need to align with the stark reality of digital innovation and transformation. Most of the services will get commoditized for the biggest leaders in services globalization like US, UK, Canada, Europe, India, Philippines, East Europe and Latin America.

The year 2020 with the global pandemic is unprecedented for most of us. Businesses are struggling to survive, thinking of recovery, and making plans to sustain and grow. Everyone is wishing that they could have been better prepared. Now is the time, when the leaders need to take care of the present, focus on recovery and prepare for resiliency in the future. We all have seen how the lockdown has decimated the traditional businesses and lives of each and every one of the seven billion global population. Many businesses have already made a decision that work from home will be the “NEW NORMAL.” Businesses are looking to automate using AI based solutions and digital workers, rather than only human workers. Bringing in AI driven innovative solution is a must.

AI driven intelligent automation solutions, available from Tholons (www.tholons.com), and the world’s leading consulting and technology companies are being deployed by world’s visionary businesses. You, as a leader have the fiduciary responsibility to your employees, customers, families and your business to act NOW! We are living in a very dynamic and exciting world, where the challenges and opportunities are immense. Let’s go out there and re-design the experience, embrace innovators and drive change for success of enterprises.

Countries like India and Philippines have been the hardest hit because their value proposition was heavily based on low cost talent, working out of offices offshore. Every consumer around the world has been witnessed to the failure of the current services model. Most of us have not been able to call and receive service from airlines, banks and other citizen services. Going forward the old model of people-based outsourcing will decline and decay. This needs to be significantly augmented by AI and Intelligent automation driven solutions.

Tholons introduced innovation, startup ecosystem and digital transformation as key components to define its index for **Top 50 Digital Nations** and **Top 100 Super Cities** in 2017. The current index for 2020 has a much higher emphasis on digital innovation attributes and assessment of how the various cities and countries have managed and are winning over the global crisis during the pandemic. The world is pivoting to the new normal.



Winning Over the Global Crisis

Unprecedented times! Everyone is wondering how the world has changed in such a short period and how we are going to manage through this? How do we survive, recover, sustain and grow through this global crisis? What could you have done to have been better prepared? The world has seen major global crisis right from the great depression of 1931, to the dot com bust in 2001, the financial meltdown in 2008 and the biggest of all, the Covid pandemic in 2020. These are times when leaders need to take care of the present, focus on recovery and prepare for resiliency in the future.

Over the last decade, technology has disrupted numerous businesses across all industries. We all have seen how the lockdown has decimated the traditional businesses and lives of each and every one of the seven billion global population. Factories have been shut down, offices and retail shops have been closed, hospitals are limiting themselves to urgent and emergency care. All non-essential products and services are unavailable. Unemployment is at its highest ever in history. Customer service contact centers have huge volume of calls, but very few agents to take the calls. All businesses are working from home. We all wish that our applications were all hosted on public cloud like Azure, AWS, Google cloud that come with many tools which help automate operations. This would have enabled a seamless “work from home.” Many businesses have already made a decision that work from home will be the new normal. Most of your processes should be done through AI and digital workers rather than only human workers. There are many intelligent solutions available driven by AI. Bringing in AI driven innovative solution is a must. So, before you automate “as is”, stop and think. Ask yourself few questions:

- Dream the customer experience you want to deliver, without technology constraints
- Is there an “off the shelf” innovative AI based solution to enable the client experience? And you bet, there is!
- Can I completely automate the solution? And you bet, you can! Don't listen to people who give you multiple reasons as to why it cannot be done

Businesses who have embraced innovative technologies have done extremely well. Numerous examples of winners should give us the motivation and sense of aggression for action. We all wish, we would have been more prepared earlier. The good news is that each and every one of us in our respective businesses can still leverage numerous innovations and the new technology, to get our businesses on track in a fairly short period. We need to prepare for the recovery and get the return on investment in less than six months. Here is list of few solutions that are being deployed by clients across the globe to manage through the global crisis (www.tholons.com):

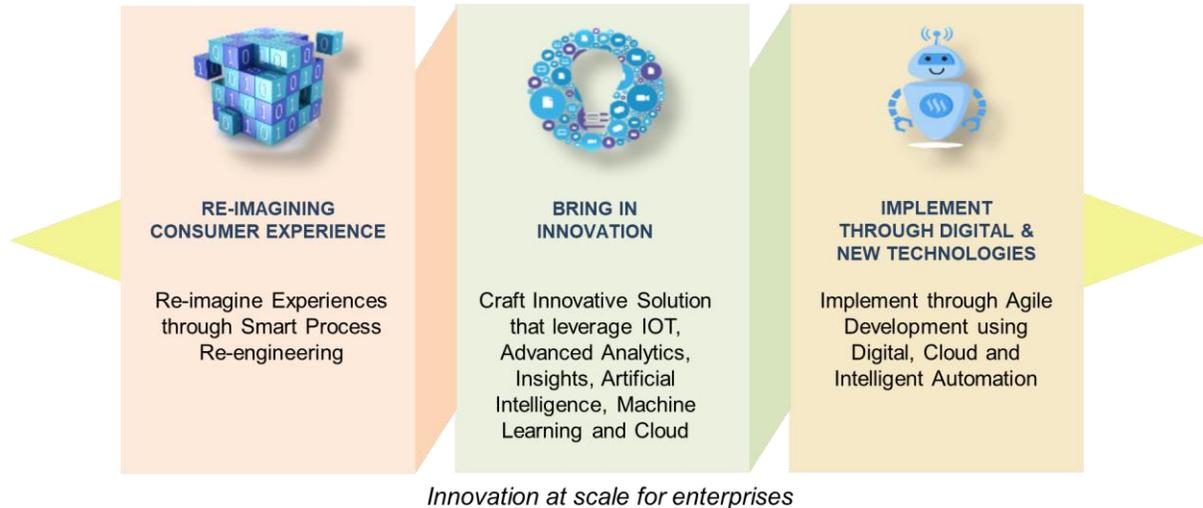
1. Digital Omni-channel Contact Centers with Conversational AI
2. Cloud Migration, DevOps, SecOps & WFH
3. AI Driven Finance and Banking Solutions and Intelligent Automation
4. AI Driven Healthcare Intelligent Automation Solutions
5. Intelligent Supply Chain



Innovation at Scale for Enterprises

Innovation at scale for enterprises is a digital transformation process/function which brings three key elements to deliver sustainable impact:

Design, Deploy, Manage new process taxonomies using new technologies



- 1. Re-image Consumer Experience**—Enterprises are working with creative design studios to re-imagine consumer experience through a process of “dreaming.” The idea is to take clients and consumers to a state of levitation that can enable them to dream the impossible. It is important to ensure that the dreamers are free from the shackles of technology, practicality and implementation realities. This creates a sweet but near impossible dream. How do we make the impossible, possible!
- 2. Bring in Innovation**—The world is full of innovators, who have re-imagined, re-designed and implemented amazing innovative solutions to deliver snippets of near impossible dreams. It is possible to explore, discover and bring in these innovations to make the impossible dreams, near possible. The solution design through innovation in most cases delivers the wow consumer/client experience. The innovative solution includes data and intelligent automation strategy, cloud, mobility, blockchain, AI, social media, IoT, machine learning and cybersecurity with advanced analytics to unlock new intelligence. The solutioning augments the power of humans with artificial intelligence, leverage AI and advanced analytics algorithms to sense, comprehend, act and learn across value chain at an unprecedented speed and scale.
- 3. Implement through Intelligent Automation**—Today's implementation is agile, powered by artificial intelligence, digital technology and machine learning. Today's workforce consists of digital workers. A combination of all these elements is what we call intelligent automation. The operations at workplace is set to have both human and digital workers, becoming an intelligent workforce completing the task/set of tasks with the power of intelligent automation, analytics and decision-making capabilities while increasing the productivity and quality and cutting down the cost. In the process of intelligent workforce operations, cognitive technologies play an important role, learning from the best.



Pivoting to the new normal

We have seen a drastic change in how digital transformation is being embraced by clients. The global pandemic has had one of the biggest impacts on the relevance of cities and how it relates to cost, infrastructure, innovation etc. New leaders are starting to emerge globally.

Talent and Skill is critical. Work From Home (WFH) is the new normal. Companies have pivoted themselves and now are able to tap in and access talent from anywhere across the globe.

Cost is important but there is a significant and complex trade-off between cost, innovation, sustainable business and risk management. Specially with the remote work, when you can tap into talent from anywhere in the world, a lot of attributes are changing their significance. 2020 will be a defining year for the future of living, working and thereby defining the meaning of Super Cities and Digital Nations of the future.

Infrastructure is extremely important for WFM and most countries have demonstrated that the adoption of cloud has been critical to sustain and operate. Video conferencing services like Zoom, Team, Webex etc., have become the new norm for meetings, both personal and for business. Unified Endpoint Management (UEM), Access, Identity solutions have become a critical part of cybersecurity and WFH.

Business Catalyst, Companies, service providers, governments and institutional policies are significantly gearing up develop intelligent automation-based solutions through digital technology, innovation and entrepreneurship. The future of enterprises is being shaped by developing an ecosystem that brings in collaboration between enterprise clients, entrepreneurs, digital platforms, experience mentors and investors.

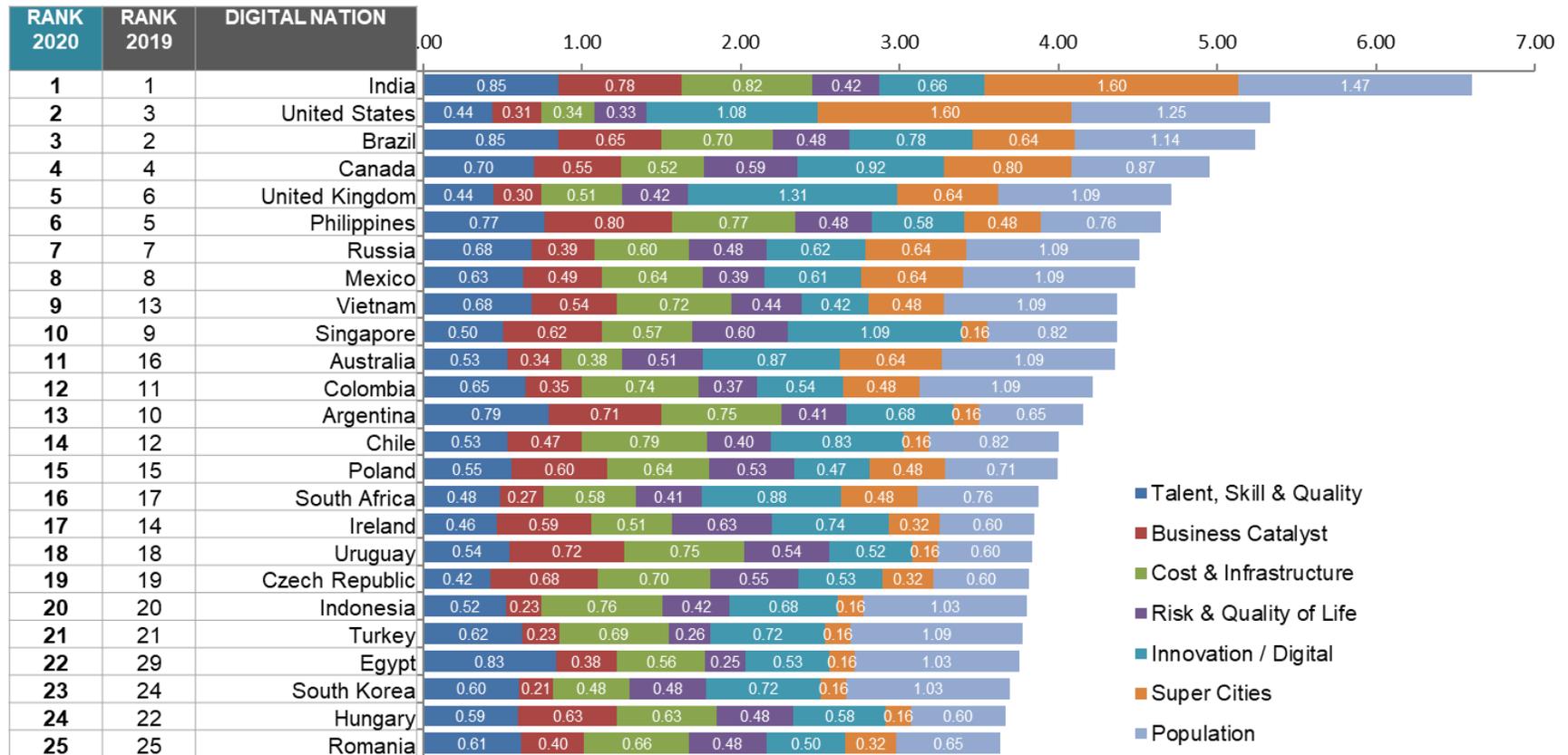
Risk and Quality, the world has come to a standstill in terms of managing risk and still being able to deliver quality of life, which has been difficult. This factor has become extremely important.

Innovation, people cannot sit and talk about innovation to be embraced five years from now. People are now wishing that they would have embraced innovation and digital much earlier. This is the most important attribute that will define the sustenance, growth and existence of the Super Cities and Digital Nations.

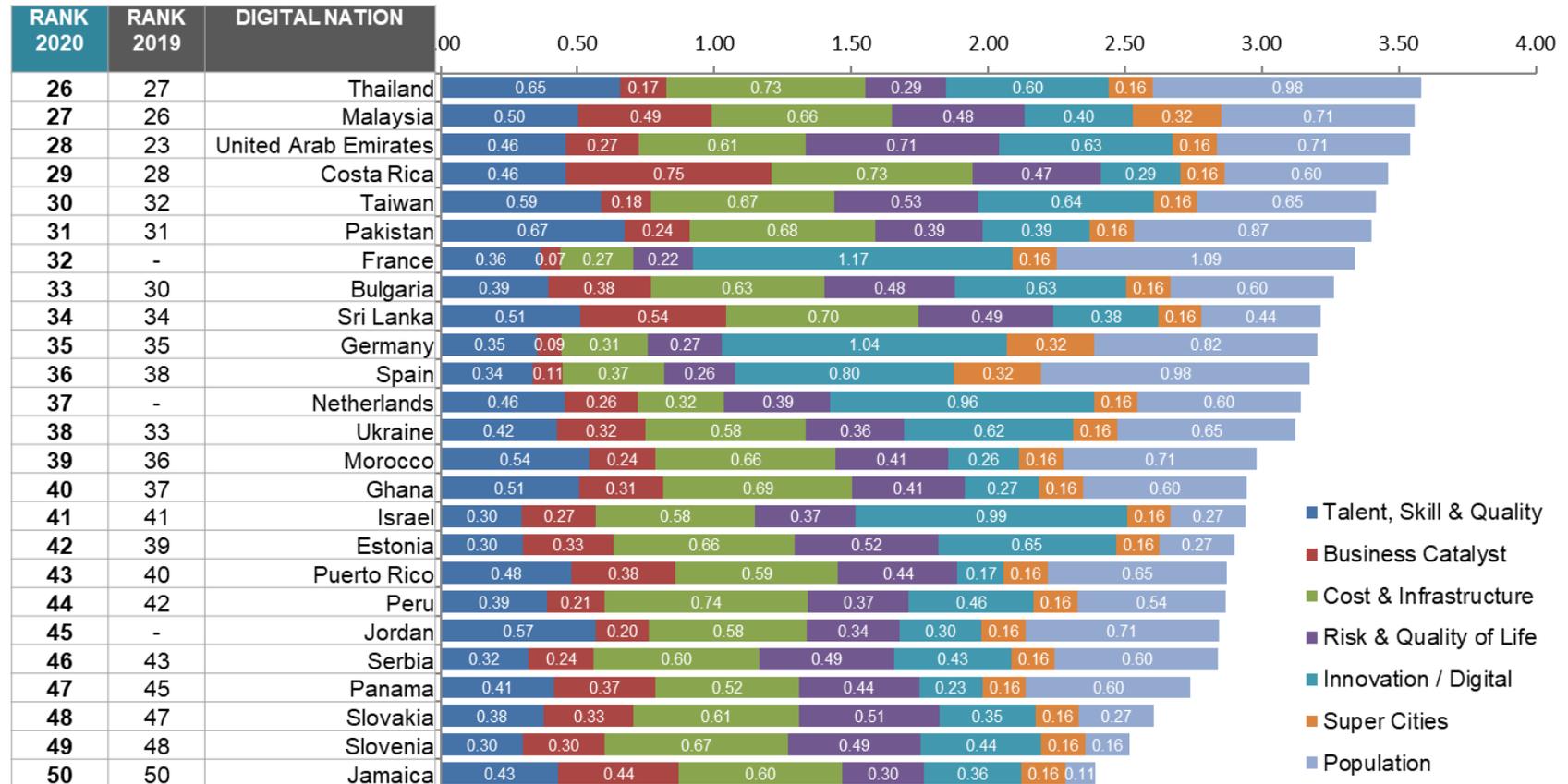


Tholons Global Innovation COUNTRY INDEX - 2020

TOP 50 DIGITAL NATIONS

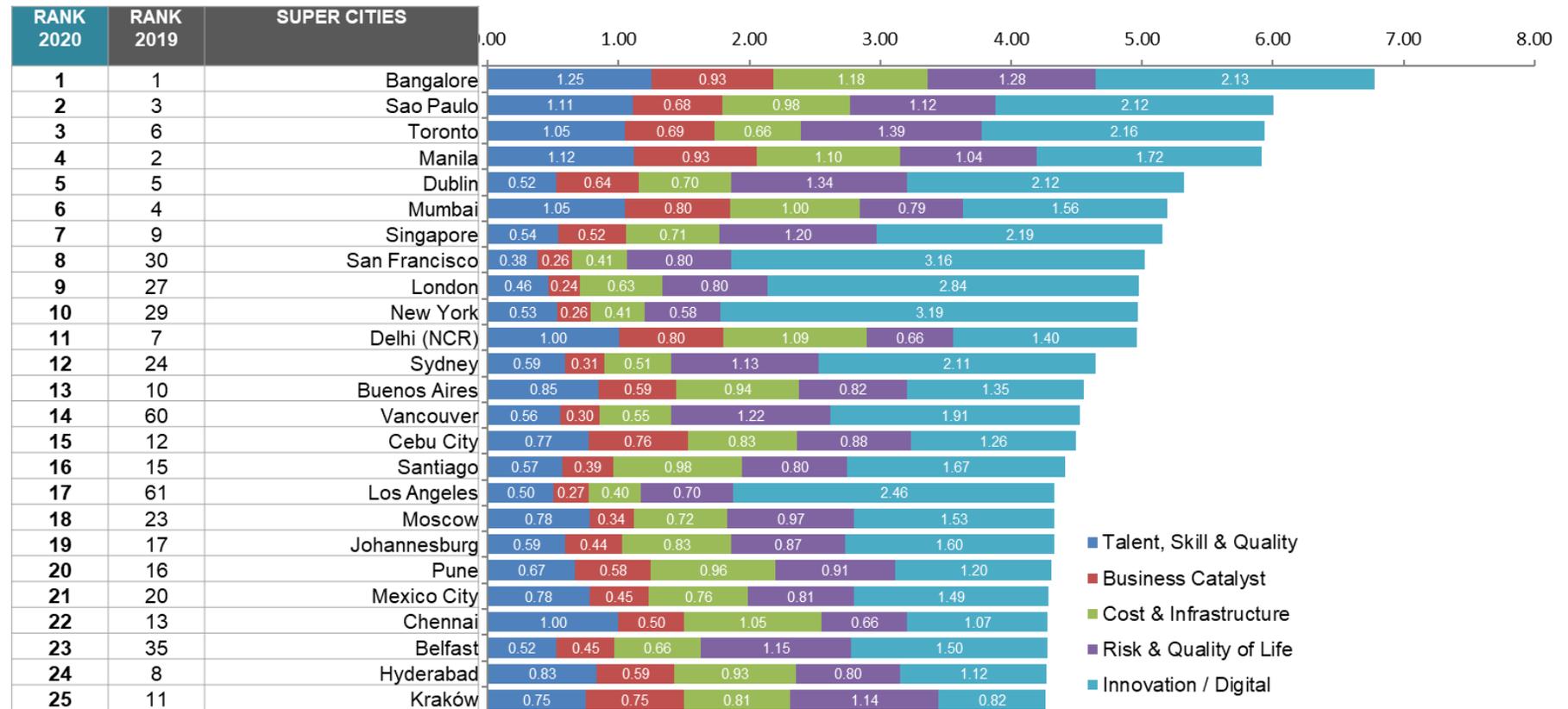


TOP 50 DIGITAL NATIONS

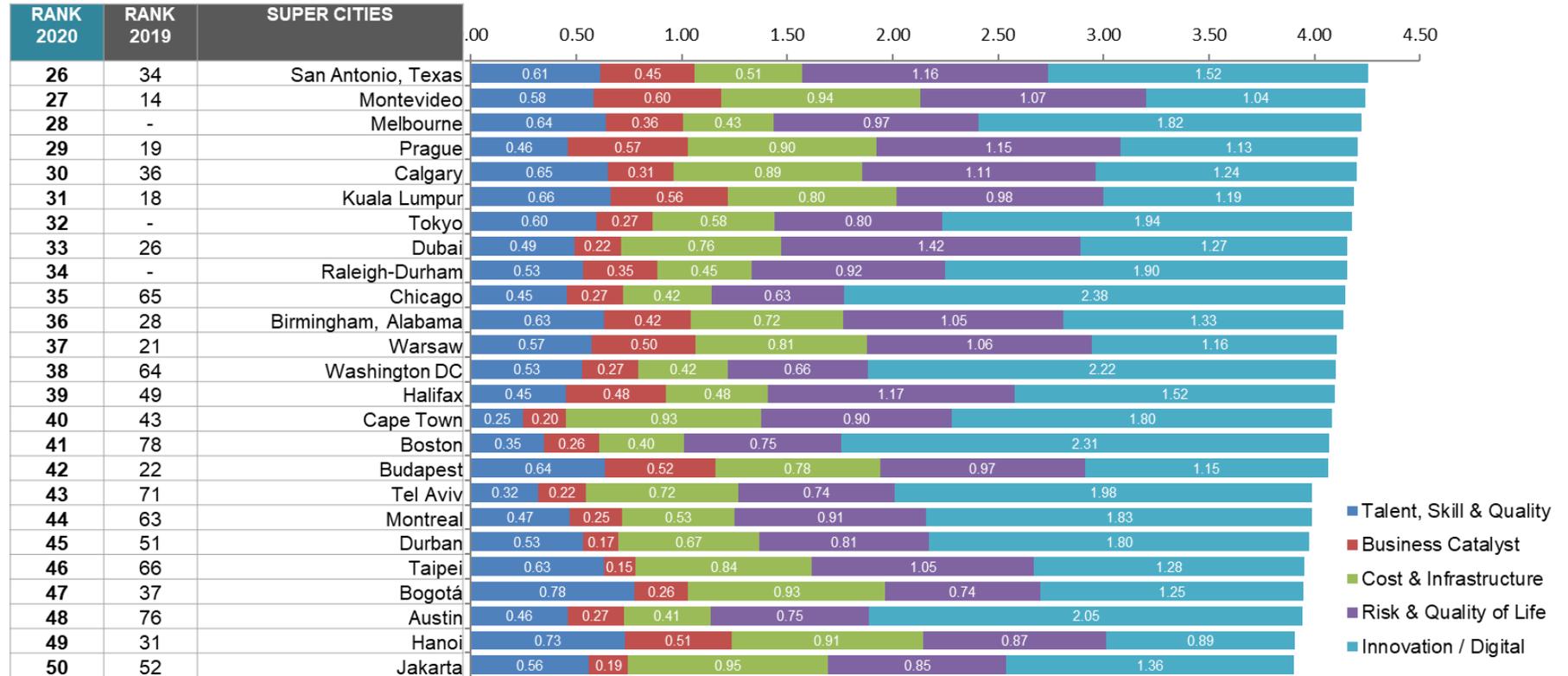


Tholons Global Innovation CITY INDEX - 2020

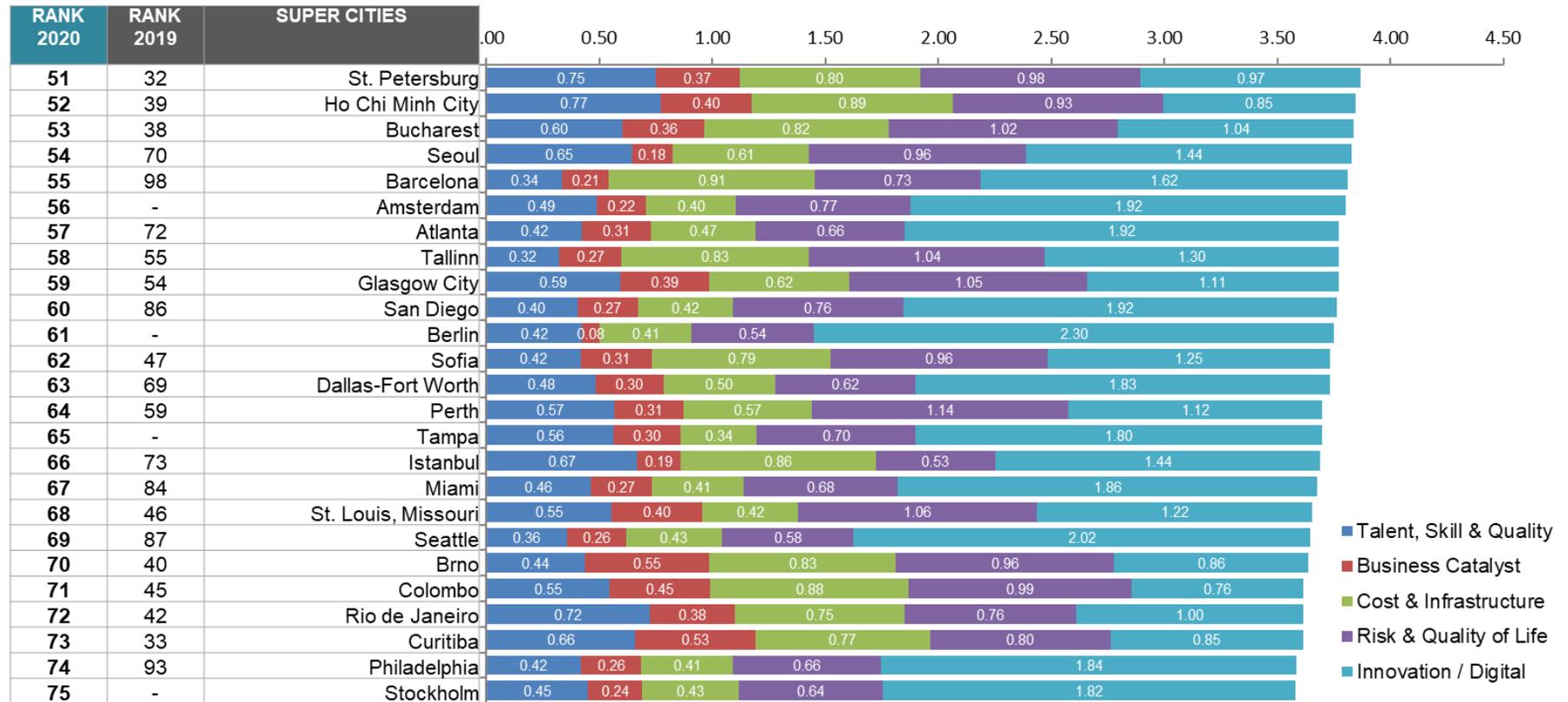
TOP 100 SUPER CITIES



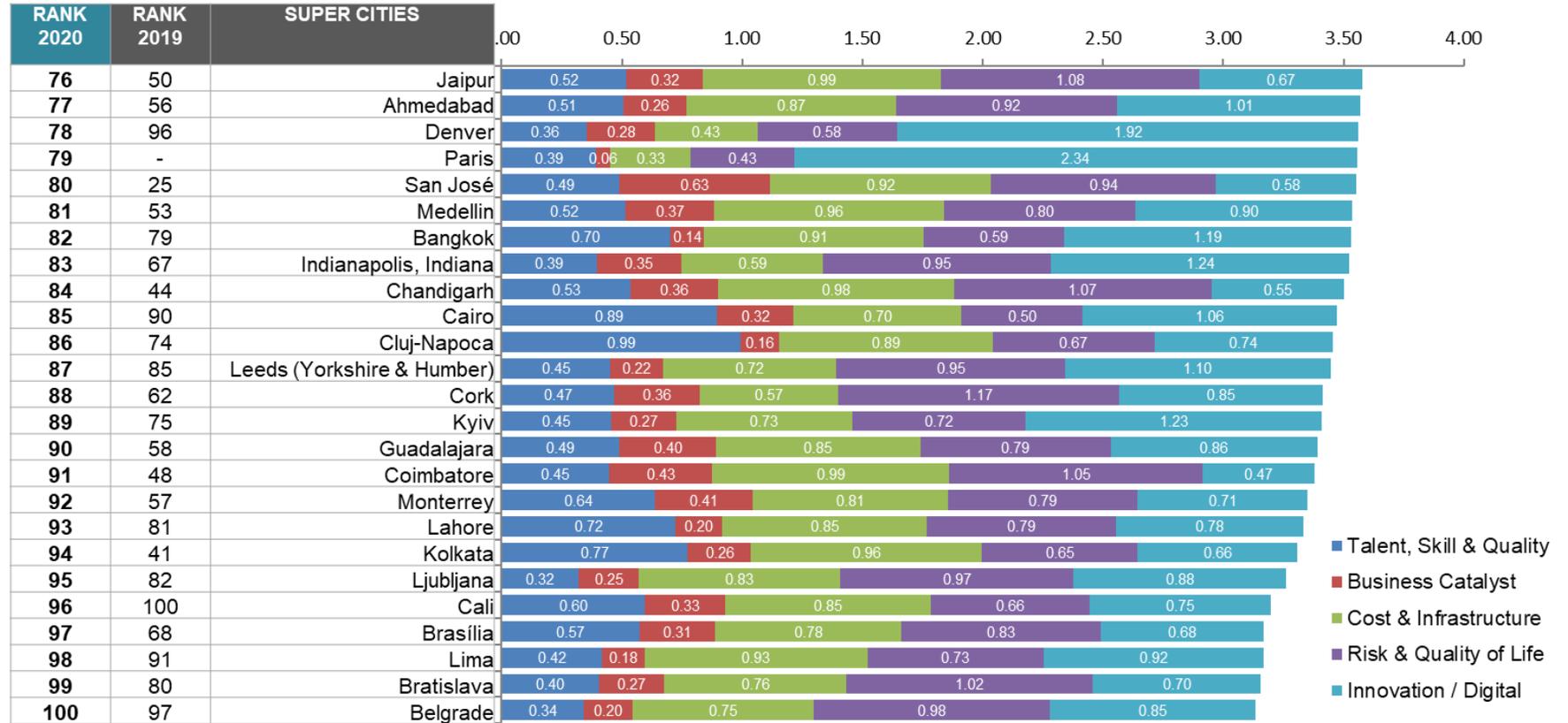
TOP 100 SUPER CITIES



TOP 100 SUPER CITIES



TOP 100 SUPER CITIES



Tholons Research Methodology

Methodology

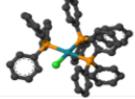
Tholons Global Innovation Index is the leading touchstone to benchmark the accelerated digital transformation of industries and services globally. The index evaluates, ranks and provides location strategies to multinational corporations, countries, governments, multi-lateral agencies, analysts and investors. Digital is now a critical element in disrupting and transforming industries globally. Technology, Business process management companies and multinational corporations need to align with the stark reality of digital innovation and transformation.

Tholons location assessment methodology integrates both primary and secondary research.

- **Primary Research:** Tholons utilizes surveys and interviews with service providers and buyers. These surveys are used to determine delivery and consumption trends for globalization services in specific destinations. Primary data gathering interviews were used to determine market and labor sizes as well as expansion strategies of leading service providers. Tholons utilizes its extensive network of industry stakeholders including buyers and suppliers of services, governments, trade bodies and associations to collect and validate data and analysis.
- **Secondary Research:** Tholons utilizes secondary research methodologies to gather volumes of historical data and various statistics and economic related data from governments, global institutions & agencies, and monetary bodies.
- **Quantitative & Qualitative Analysis:** Tholons employs a combination of quantitative and qualitative analysis in developing the weighted rankings. Our proprietary ranking framework continues to evolve to align with most of the current market realities and demand. Further, qualitative analysis was implemented to provide perspective to the quantitative results of the report. Tholons carefully considered numerous variables when providing final rankings, validated by senior thought leaders from Tholons and industry leaders globally.



Following are the metrics used to evaluate location attractiveness. The relative weights of each metric are based on their importance to the location decision, again derived from client experience and industry surveys. TGII's 2017 ranking was published with traditional factors having 80% weightage and digital with 20% weightage. TGII's 2018, 2019 ranking attributed traditional with 75% weightage and digital with 25% weightage. The current **TGII 2020 Report** attributes traditional with 60% weightage and digital with 40% weightage.

| Talent Skills & Quality | Business Catalyst | Cost & Infrastructure | Risk & Quality of Life | Digital & Innovation |
|--|--|--|---|--|
| <ul style="list-style-type: none"> Total Population Non-Technical Graduates Technical Graduates | <ul style="list-style-type: none"> Employed in BPO Sector Employed in ITO Sector BPO Providers ITO Providers | <ul style="list-style-type: none"> BPO and ITO Salary Cost Real Estate and Bandwidth Cost Leased Line Providers Airport Connectivity Mass Transport Systems Hospitals & Educational Institutes Availability of Class-A IT Parks | <ul style="list-style-type: none"> Risk - Socio Economical, Political, Natural & Commercial Digital Cyber Security Corruption Index Regulatory and Compliance | <ul style="list-style-type: none"> Open Innovation Ecosystem Startups, Diversity & Maturity Innovative Policies & Incentives Unicorns Digital Investments |
|  |  |  |  |  |
| 15% Skill & Scalability | 10% Ease of Doing Business | 15% Operational Cost & Business Environment | 20% Risk to Business & Quality of Life | 40% Digital Transformation |

Talent, Skills and Quality

Refers to the overall talent pool availability in a particular location and in relation to the capability of the labor pool to meet staffing demands and fulfil outsourced services from both scale and quality perspectives. Total population, demography, labor pool size, annual tertiary graduate output, both in technical and non-technical background and skills proficiencies were among the host of related components considered when generating the Talent, Skills and Quality Score.

Scoring: 10 = High scale and quality 1 = Low scale and quality

Business Catalyst

Business Catalyst measures industry-related activity as well as the degree of organizational support present in a location, which is geared to develop the services outsourcing industry and support the development of digital technology, innovation and entrepreneurship. Current industry performance including the top service providers and captives, location's headcount and revenues,



etc. Number of Employees in ITO & BPO, Number of ITO & BPO Providers and ease of doing business and Policies and incentives for FDI are among the critical sub-components.

Scoring: 10 = *Strong business catalyst* 1 = *Weak business catalyst*

Cost & Infrastructure

Cost includes relevant payroll and non-payroll costs in a location. Real Estate cost, basic outsourcing industry salary costs are among the factors considered to generate the Cost Score. With the internet now being indispensable, the bandwidth cost has also been included. Infrastructure refers to the availability of physical and technological platforms/systems, which are required to host outsourcing operations from a location. This considers the availability of office space, number of special economic zones or IT parks, mass transports systems, number of leased line providers, Number of Hospitals, Number of Educational Institutes and airport Connectivity.

Scoring: 10 = *Low cost and Capable infrastructure available* 1 = *High cost & Inadequate infrastructure*

Risk & Quality of Life

Risk encapsulates the qualitative perceptions and measurable occurrences of natural and socio-political risks which in turn affect the quality of Life, where quality of life refers to non-operational considerations and ecosystem components that may affect living and working conditions. Risk is quantified according to the propensity of events to impact personal safety and the overall stability of a location to hosting business operations. The overall Risk and Quality of Life Score is generated from the identification of social infrastructure, non-work culture, and availability of leisure and recreational facilities, among others and from the identification of factors such as economic, political, natural, social and also cyber and digital risks in a location.

Scoring: 10 = *Low risk & High quality of life* 1 = *High risk & low quality of life*

Digital & Innovation

Digital and Innovation is the lifeline of today's businesses. Businesses must embrace digital technologies and platforms like social media, mobile technology, cognitive computing, cloud and artificial intelligence to cater to the changing demands.

Following are the parameters considered for Digital and Innovation:



Open innovation ecosystem, number of startups, startup diversity and maturity, innovative policies and incentives, unicorns, cyber security, global digital competitiveness, digital literacy rate i.e. the number of people using internet, digital evolution, digital talent and high tech patent grants, business agility, usage of RPA/AI/cloud, investors.

Scoring: 10 = High digital and innovation 1 = Low digital and innovation

Super Cities in Top 100

Super Cities in Top 100 refers to the number of cities from a given country that are ranked in Tholons Global Innovation City Index 2020 among the Top 100 Super Cities.

Scoring: Number of cities in Top 100 Super Cities Index.

Workforce/Total Population

Workforce is a measure of the size of the workforce population in a given country and is an indicator of a talent pool available that can be skilled/re-skilled to serve cross industries in services.

Scoring: The total population of the country that is derived from the population of the cities present in top 100 list for a given country.

10 = High workforce 1 = Low workforce



About Tholons

THOLONS is a Global Strategic Consulting, Digital Innovation and Investment Advisory group serving Fortune 500 / Global 2000 clients, multi-lateral / development agencies and countries. Tholons has over two decades of experience and an unparalleled network of clients, mentors, startups, system integrators, technology partners and venture funds

Tholons helps clients maximize returns on their innovation, digital transformation, business growth and global expansion. MY SPACES, the Enterprise Innovation global network, powered by THOLONS is the global leader and platform in collaborative ecosystem of Co-work | Co-innovate | Co-invest.

Tholons advisors engage with senior management of client organizations to develop strategies for global expansion. We have deep understanding of key industries like Financial Services, Banking, Healthcare, Insurance, Media and Entertainment, Manufacturing, Retail, Telecom, Education, Utility, Oil and Gas and Technology.

Tholons draws upon the considerable experience of a handpicked team, which has successfully formulated and executed globalization and digital strategies to unlock value. Service providers leverage Tholons expertise to optimize their global delivery model. Tholons advisors engage with government bodies to build compelling strategies for making countries attractive destination for technology, digital, innovation and business process management.

THOLONS Global Offices

North America

46 W, Julian St.
Suite 205, San Jose,
CA 95110

Europe

The Landmark West
Tower, 22 Marsh Wall,
London, E14 9AL

South America

Av. Italia 6201
Latu Los Sauces Of. 104
11500 Montevideo,
Uruguay

India

346, 17th Cross
HIG Colony, Dollars Colony
Bangalore 560 094,
India

Philippines

805, Antel Global
Corporate Center,
Manila NCR 1600
Philippines

Author and Editorial Board:

Avinash Vashistha
Chairman & CEO, Tholons Inc.

Fabrizio Operti
Chief, Trade & Investment Division, IDB

Kerry Hallard
President & CEO, Global Sourcing Association

Richard Jones
Chairman, Proxima

Kitade Y
Managing Director, Global Initiative Inc.

Warren Gallant
Founder, TPI

Dawn Tiura
President & CEO, SIG

Debjani Ghosh
President, NASSCOM

Jonathan De Luzuriaga
President, PSIA/ IBPAP

Michael Barrett
Professor, IT & Innovation, University of Cambridge

Andrew Wrobel
Chief Strategist, Emerging Europe

Dr. Garima Vashistha
President - Research, Tholons Inc.

Ankita Vashistha
President - Innovation & Ventures, Tholons Inc.

Anthony Rajesh
Principal - Research, Tholons Inc.

We would like to thank the various industry associations, investment and promotion agencies, global clients, leading technology service providers, multi-lateral agencies and Tholons global research team for this 2020 Tholons Global Innovation Index.

Media Contact:

New York: Ankita Vashistha
+1-646-250-3828 | ankita@tholons.com

London: David Jones
+44-745-967-9656 | david@tholons.com

Bangalore: Anthony Rajesh
+91-988-645-7772 | rajesh@tholons.com

