



Pakistan, the Next ICT Powerhouse

-New Partner for the Expansion of Your Digital Business-



Japan International Cooperation Agency

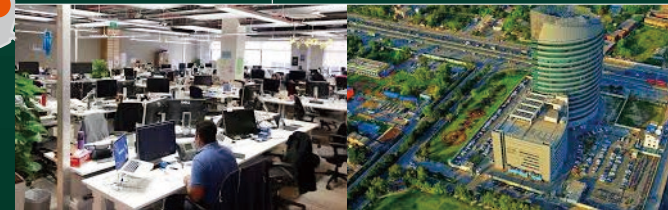
An emerging economy with a huge market of 200 million people, abundant young labour force, and a huge growth potential

A Japan-friendly country: the share of Japanese cars is nearly 100%

An untapped fast-growing ICT market supported by 5,000 ICT companies and 300,000 ICT engineers

Pakistan at a Glance (Source: Pakistan Statistics Bureau, JETRO)

Official Country Name	the Islamic Republic of Pakistan
Population	208 million (2017)
Capital	Islamabad (Population: 1.01million)
Major Cities	Karachi (15.91 million) , Lahore (11million)
Area	769,096km ² (rounly the twice of Japan)
Polity	Federal republic
Religion	Islam (96%) , Other (4%)
Language	Urdu (National Language) , English (Official Language)
Currency	Pakistani Rupee
Nominal GDP per capita	1,388 USD (2019)
Real GDP growth rate	3.29% (2019)
Time difference with Japan	-4 hours
No. of Japanese companies in Pakistan	79 compnies (as of Mar. 2020)
Investment by Japanese companies	\$ 117.3 million USD (FY2018/19)*50% increase from previous FY



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A huge emerging market with a population of 200 million
(5th in the world)

An increase of 20 million in the last 20 years.



A young country with 55% of the population under 35.

An abundant labour force, with an increasing working population.

A significant rise in the standard of living.

Pakistan's per capita purchasing power has doubled in the last 20 years.



A remarkable improvement in the "Ease of Doing Business"

World Bank's "Doing Business" Ranking:
136th (2018/19) → 108th (2019/20)

Highest software export growth rate in South Asia

An average annual growth rate of 19.5% for software exports over the past five years

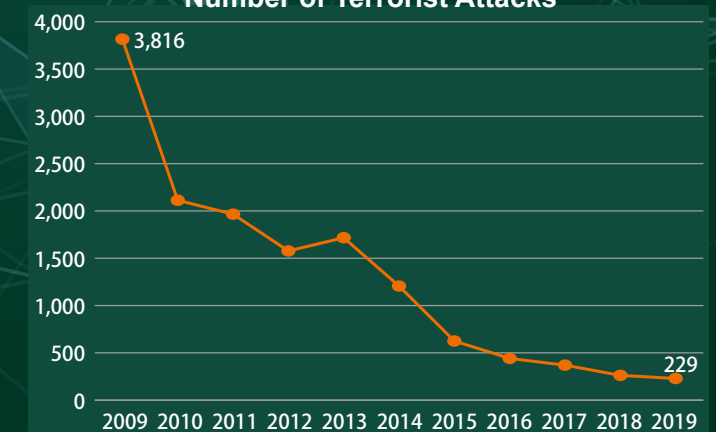


Column: Pakistan has become significantly safer in recent years

Pakistan may have been misunderstood that it is unsafe, but the government has been energetically working to improve safety, and the number of terrorist attacks in recent years has dropped to less than 10% of its peak. The attacks are mostly limited to the areas along the western border, and the security of the major cities Islamabad, Karachi and Lahore has improved significantly. Karachi, which was once ranked high in the "Crime Index by Cities" * that compares crime rates in cities around the world, recently has lower crime rates than other international cities such as Chicago and Washington DC in the United States, and Marseille in France, showing it has become much safer.

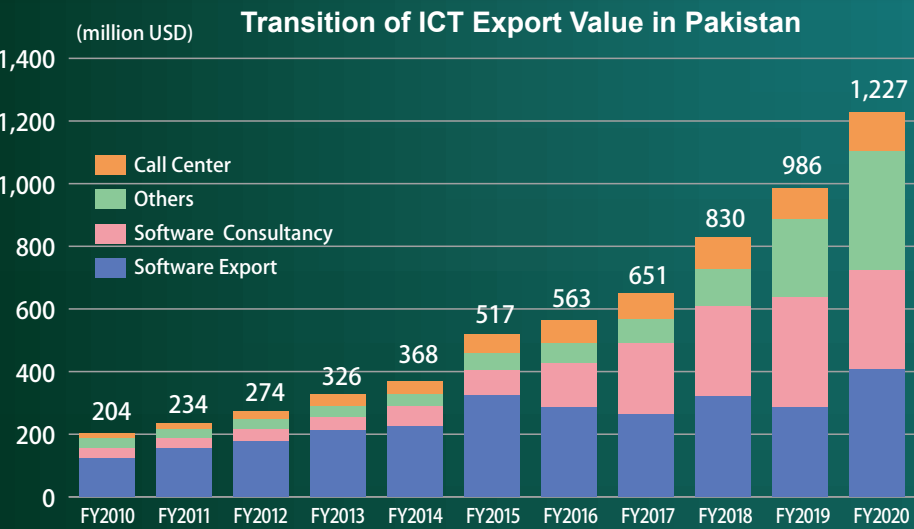
* [Crime Index by City 2021]
<https://www.numbeo.com/crime/rankings.jsp>

Number of Terrorist Attacks



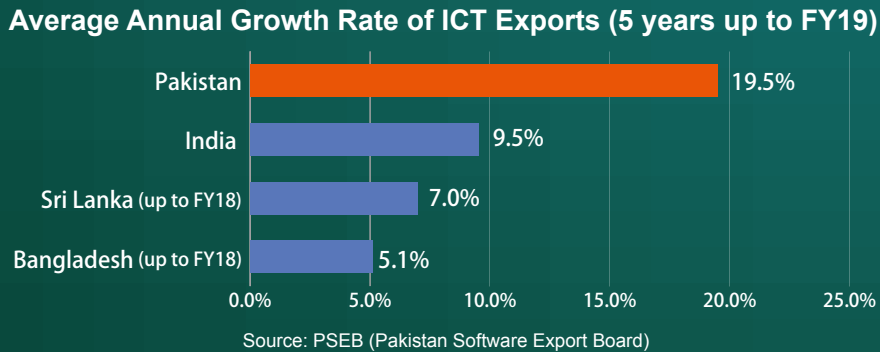
Source: Pak Institute of Peace Studies

ICT-related exports have increased six-fold in 10 years, achieving the fastest growth among South Asian countries.



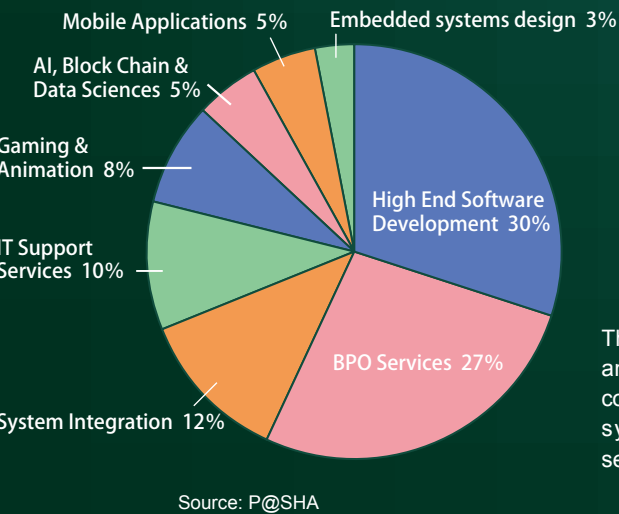
Source: State Bank of Pakistan

The average annual growth rate of ICT exports for the past five years leading to FY2019 was 19.5%. This is the highest growth rate in South Asia, far ahead of India, which ranks second.



60% of ICT exports are software and consulting, and more than half of the exports are to The USA.

Breakdown of Pakistan's ICT Service Exports



There are 5,000 ICT companies, and their business areas mainly consists of software development, system integration, and BPO services such as call centers.

Roughly half of the esports are to the US. Others include countries of America, Europe and Asia, with Japan ranking at 11th.

Pakistan's ICT Export Destinations

Ranking	Country	Share(%)
1	USA	52.11
2	UAE	8.84
3	UK	7.00
4	Singapore	3.21
5	Malaysia	3.02
6	Canada	2.83
7	Netherlands	2.79
8	China	2.43
9	Ireland	2.17
10	Germany	2.1
11	Japan	1.37

Source: PSEB (Pakistan Software Export Board)

Pakistan's popularity is increasing as an outsourcing destination due to strong price-competitiveness.

Ranking 5th on the financially attractive countries in the world for outsourcing services - A.T. Kearney's Global Service Location Index 2019

World-renowned ICT companies are doing business in Pakistan

Major Multinational Companies Operating in Pakistan

Teradata

Has been operating in Pakistan for more than 25 years, mainly focusing on offshore services for foreign countries. The company provides services to large-scale Japanese automobile and e-commerce companies.

CISCO

Provides services to sectors such as banks, manufacturers, government agencies, and telecom companies in Pakistan. Certified training centres have been established in major cities and in some universities in Pakistan.

7 multinational companies including ORACLE, IBM and others

Have established development centres in Pakistan

While local subsidiaries of multinational companies occupy the top of the list, local listed companies NETSOL and Systems are among the top exporting companies.

Many multinational companies have set up operations in Pakistan. In addition to local services and offshore development, many companies have set up IT development centers.

Top 5 ICT Exporting Companies in Pakistan

Rank	Name of Company	Main Areas of Expertise
1	NETSOL Technologies Ltd	Asset finance & leasing software
2	S&P Global Market Intelligence Company	Financial data analytics
3	Systems Limited	IT consulting, ERP, BPO services
4	Ibex Global Solutions (Pvt) Ltd	A TRG company providing BPO solutions & services
5	Teradata Global Consulting Pakistan (Pvt) Ltd	Data analytics & global consulting services

Source: PSEB (Pakistan Software Export Board), 2017

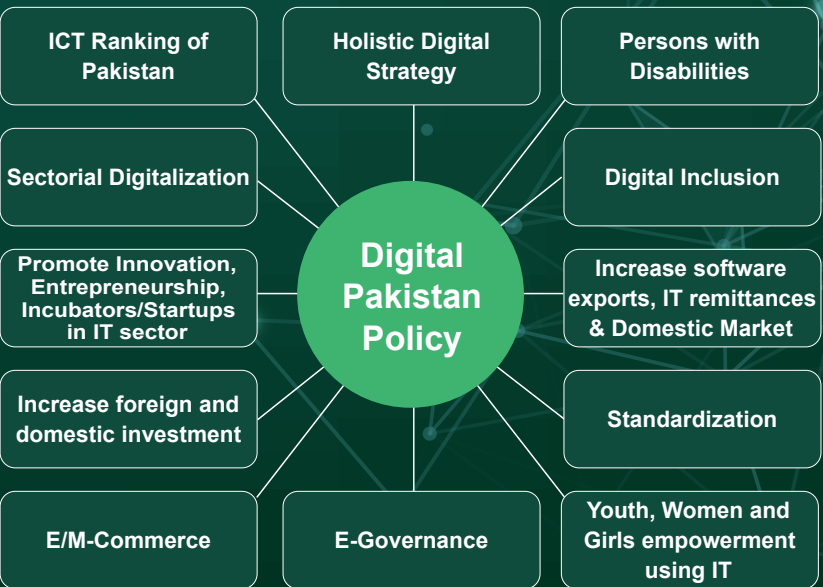
Other multinational companies operating in Pakistan

SAMSUNG Intel Hewlett-Packard HUAWEI SAP ERICSSON Dell

Government boosts growth in the ICT industry

The Pakistani government formulated the "Digital Pakistan Policy" in 2018 and implemented various support measures for ICT companies. It is actively working to expand the ICT market and to promote the industry.

"Digital Pakistan Policy" supports the growth of the ICT industry with its 12 pillars.



Preferential treatment for foreign companies

Zero income tax on IT & ITes exports till June 2025

Zero Income tax, no minimum tax and withholding tax for PSEB registered IT start-ups for 3 years

Up to 100% foreign ownership of IT & ITes companies

Up to 100% repatriation of profits for foreign IT & ITes investors

Tax holiday for venture capital funds till 2024

Foreign currency account permitted for only receipt of export remittances (up to 35% can be retained in foreign currency)

Accelerated depreciation of 30% on computer equipment

Provision of low-price rent space in Software Technology Parks (STPs)

Source: PSEB (Pakistan Software Export Board)

The government has established National Incubation Centers (NIC) in five major cities.

200 Startups has already graduated from NICs

Young and abundant ICT engineers

55% of
population under 35.
A young and
robust workforce

300 thousand
active ICT
engineers

20 thousand
new ICT graduates
every year

Approximately 300,000 ICT engineers are active in Pakistan, and there are experienced personnel who are familiar with the latest and emerging ICT products and technologies, and can be of use to companies of all levels as programmers or software development managers. And most of these engineers are fluent in English.

Pakistan ICT Engineers' Average Monthly Salaries for 2017

In Japanese Yen (Exchange rate : 1 Rupee = 0.7 Yen)	Entry Level	Middle Level
	National Average	National Average
Java	44,963	81,778
Android	42,133	108,584
Python	67,116	87,481
Data Scientist	45,272	83,635
Web Designer	41,282	74,071
Support Desk	35,871	54,699
Quality Assurance	50,778	83,635
Game Designer	58,743	97,479
Administration	29,049	43,658
Software Dev.Manager	n/a	115,073
Project Manager	n/a	103,023

Source: Salary Survey, P@SHA, 2017



The average monthly income of these ICT engineers is shown in the table on the left. While labor costs in Asian countries such as India (average annual income of 5.33 million yen) and Thailand (1.95 million yen) * are rising, the average annual income of middle-level project managers in Pakistan is about 1.2 million yen. As a result, it has become a hot market due to its high price-competitiveness and technological capabilities.

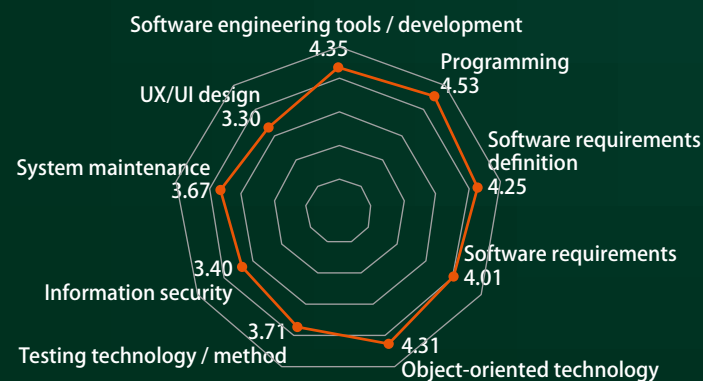
*Report on Comparative Survey Results for IT Human Resources in Each Country (METI 2016)

The skill level of Pakistani ICT engineers

According to the "IT Skills Survey 2021" conducted by JICA in collaboration with the Pakistan Software House Association (P@SHA), 98% of Pakistani ICT engineers have a college degree or masters degree, and their skill level is high. Based on the i-Competency Dictionary provided by IPA*, the Pakistani engineers self-evaluated their skills in 7 levels and as a result, the percentage of engineers with level 5 or higher was 27.6%. This is a very high ratio compared to Japan's 5.2% **, which indicates a high skill level.

*INFORMATION-TECHNOLOGY PROMOTION AGENCY, JAPAN
**from "IPA White Paper on IT Human Resources 2020"

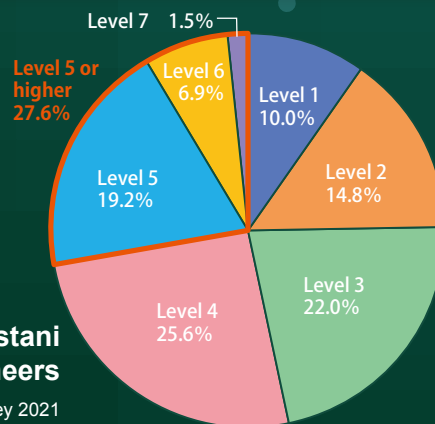
Skill Level in the Field of Software Development



Source: IT Skills Survey 2021

Skill Levels of Pakistani ICT Engineers

Source: IT Skills Survey 2021

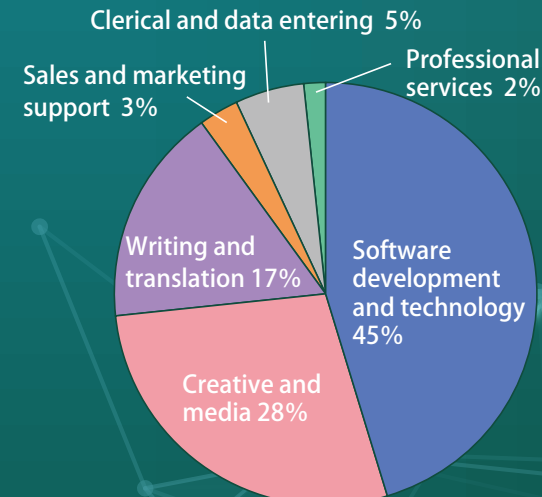


By field, the survey results show that Pakistani ICT engineers are highly skilled in programming and software engineering tools / development in the software development field, data search / processing / cleaning and data analysis methods in the data science field, and infrastructure architecture design and cloud construction in the cloud engineering field.

Pakistan has one of the largest numbers of freelancers in the world, and ranking 2nd in the number of orders for gigwork*

Pakistan has the second highest number of freelancers in South Asia and the second largest number of gigwork orders in the world.

Types of Work Undertaken by Freelancers



Source: Oxford Internet Institute (as of Feb. 19th, 2021)

The federal and provincial governments of Pakistan are providing various human resource development support programs to further develop ICT human resources. In addition to incubation and acceleration programmes, there are also technical training programmes for freelancers. Pakistan is the only country in the world to offer such programmes for freelancers.

*Gigwork: One-off work undertaken through platform services on the Internet.

Number of Freelancers in South Asian Countries

Rank	Country	Freelancers	Active Freelancers	% Active Freelancers
1	India	245,342	36,733	14.97%
2	Pakistan	62,442	11,651	18.66%
3	Bangladesh	55,449	8,761	15.80%

Source: analyticshelp.io

45% of the work that these freelancers undertake is software development. In Bangladesh, which also has a high number of freelancers, software development is 16.6%, so Pakistan has a significantly higher ratio of software developers.

ICT Human Resource Development Support Programmes

Incubation / Acceleration Programmes	
National Incubation Centers (NIC)	Provides support and ecosystem for start-ups and entrepreneurs. 200 companies have graduated and created 5,000 jobs.
Plan X / Plan 9	Incubation and Acceleration Programmes provided by Punjab provincial government. Plan X have supported more than 195 start-ups. Plan 9 have supported 33 start-ups, and 70% succeeded in attracting investment.
Training Programmes for Freelancers	
Digiskills.pk	An e-learning site. There are 10 courses including e-commerce management, digital marketing, QuickBooks, graphic design and SEO. A total of more than 1 million people have taken the courses.
e-Rozgaar	A Three-month training programme in Punjab. A total of 20,000 freelancers have taken the course.

Interview of Pakistani ICT engineers working in Japan

Mr. Asad Mehmood (Rakuten, Inc.)

I am currently working at Data Solution Group of Rakuten, where I have been working for 6 years. I first came to Japan in 2008, when I got transferred to the Japan office of a company that imported used cars from Japan.

Looking for a new challenge, I found a new position at the Cloud Platform Department after that. At the beginning, I experienced some difficulties living in Japan because I did not speak the language, but at my current workplace there is a community of foreign colleagues, and they provide a lot of support in the day-to-day life. I like living in Japan because it is safe, clean, and just easy to live as a foreigner. I know many other Pakistani ICT engineers working in the telecom sector in Japan.

Pakistan has contributed a lot to the World's ICT industry through software development. Also, it is an untapped market, so there are lots of opportunities for Japanese companies to hire high-quality ICT engineers.



Mr. Usman Ali (Rakuten Mobile)

I work on network operations at Rakuten Mobile, and have been working there for almost 2 years. After graduating from an IT university in Islamabad, I worked at local subsidiaries of telecom companies such as Huawei and Nokia for 7 years.

I came to Japan 3 years ago. Back then, I was looking for an overseas job because I wanted to take on a new challenge, and I was able to get a contract with Avinton and join a network design greenfield project of Nokia's Japan subsidiary. When I decided to move abroad, my family and friends recommended Japan. Many people in Pakistan have a very good image because Japan is safe, easy to live in, and there is little discrimination. When I actually came to Japan, I felt that all I heard was true, and although I experience language barriers, I plan to stay here long term.

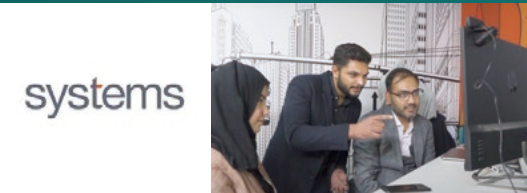
I would like Japanese companies to get to know more about Pakistani engineers and their capabilities.



Featured ICT Companies

Systems Limited A pioneering technology consulting and business process outsourcing company

Outline	Systems Limited is a full-service technology consulting and digital business process management company that delivers first class technology-led solutions to help its regional and international clients increase operational agility, drive down costs, and reduce business risks. It has strong ties with the Financial Services, Telecom, Public Sector, Retail, and Consumer Goods industries, with a track record of over 44 years of successfully delivering large-scale projects for major global organizations, including several Fortune 500 and Forbes Global 2000 companies.
Expertise	Systems Limited's expertise in Digital, Data, Cloud, and Business Process Outsourcing is a source of consistent ROI for its clientele. The company possesses high competence in the following key areas: Business Solutions, Enterprise Integration, Intelligent Automation.
Achievements	<ul style="list-style-type: none"> ■Total group sales of over 6.8 billion Japanese Yen, and yearly growth of 31%. ■Included in Forbes Asia's "Best Under A Billion" list ■Secured multiple honors as Top IT Exporter at the 2019 PSEB IT Export Awards.
Company info	<ul style="list-style-type: none"> ■No. of Employees: 6,500+ (globally) ■Location: In Pakistan: Karachi, Lahore, Islamabad, Overseas: Dubai (UAE), Doha (Qatar) ■Website: https://www.systemsltd.com/ ■Contact: sales@systemsltd.com



NETSOL Technologies, Inc. A leading global IT company that provides the world's top asset finance& leasing companies with smart software technology.

Outline	NETSOL Technologies, Inc. is a worldwide provider of business services and enterprise application solutions, with 20+ years of experience in the Asia Pacific region, 25+ years in Europe and 40+ years in USA. It has successfully delivered more than 300 product implementations worldwide to a diverse and growing client portfolio base, including many leading Fortune 500 companies. Through its on-shore and off-shore IT operation facilities, the company is strongly positioned to provide a wide range of Professional Consulting services.
Expertise	<ul style="list-style-type: none"> ■Products: solutions and services catered for Finance and Leasing businesses such as Automotive Big Ticket, Equipment, Asset, Wholesale, Instalment Credit, Bank Owned Companies and Finance Companies. ■Services: Professional and Technical Services such as Software Development and Implementation Services, Application Architecture & Integration Design and AI & ML Solutions and many more. Business Process Outsourcing (BPO) Services.
Achievements	<ul style="list-style-type: none"> ■Listed on NASDAQ USA in 1999 (NTWK). ■The first IT Vendor to implement a mobile point of sale solution in the asset finance & leasing domain. ■200+ Global Clients, including fortune 500 companies.
Company info	<ul style="list-style-type: none"> ■No. of Employees: 1300+ ■Location: In Pakistan: Lahore, Overseas: Calabasa (USA) (Headquarters), London (UK), Sydney (Australia), Bangkok (Thailand), Jakarta (Indonesia) ■Website: https://netsoltech.com/ ■Contact: info@netsoltech.com



TeReSol A fast-growing R&D company with experienced professionals that design, manufacture and market a range of innovative customized embedded products

Outline	TeReSol is an ISO 9001 & ISO 20000 and CMMI Level -III (under process) certified R&D company. Established in 2010, the company has been focusing on providing customized embedded solution and software services for Avionics, Consumer Electronics, Automobile and Banking /Financial sector.
Expertise	<ul style="list-style-type: none"> ■Embedded designs: complex multi layers (18-24) high speed signal processing PCBs, Single Board Computers (SBC) for time scheduled applications, their board support packages/APIs for external integration and complete customized end-to-end product (qualified for tough temperature environment). ■Software services: design /development of Enterprise Service Bus (ESB) Architecture based scalable/secure solutions, Algorithm design using Machine Learning/AI techniques and their real time implementation in various fields/areas.
Achievements	<ul style="list-style-type: none"> ■More than four million man-hours of development experience. ■Steady financial growth since establishment ■Pakistan Software Houses Association (P@SHA) ICT Award (2016)
Company info	<ul style="list-style-type: none"> ■No. of Employees: 300 ■Location: In Pakistan: Islamabad, Lahore, Karachi Overseas: Dubai (UAE) , Singapore ■Website: http://teresol.com/ ■Contact: info@teresol.com



Featured Start-ups

STech.ai Transforming Vision Information to Data Technology

Problem-solving	With more than 350 million video security cameras worldwide, there is an immense need for video analytics across all verticals. Organizations are quickly realizing the value of analyzing video surveillance footage as a proactive means to create strategies that enhance the overall experience, improve retention, uncover quantifiable data and trends to better understand the customer's behavior and ultimately increase profits. STech.ai's technology can assist organizations to achieve this through providing fast and effective video analytics solutions.
Business Model	STech.ai provides an AI-based technology that analyses videos for a range of solutions such as Vehicle Counting and Classification, Automatic License Plate Recognition, Parking Management, Person Detection, Crowd Counting and Anomaly Detection, Facial Recognition, Intrusion Detection, Aerial Footage Analysis, and Video Summarization. The company's products have answers to all queries related to human resource management, safe transportation and video analytics, all with an accuracy rate of over 98%. Their solutions have the ability to cater to all kinds of needs, and adapted in areas of traffic management, retail analytics, landscape analytics, manufacturing, and many more.
Company Info	<ul style="list-style-type: none"> ■Established in 2018 by Mr. Adeel Chaudry ■Located in Islamabad and UK ■Website: https://stech.ai/ ■Contact: rshoab@stech.ai



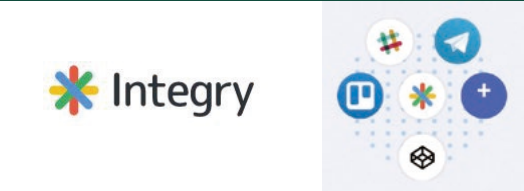
QUMAQ Your On-Demand Custom Drone Solution

Problem-solving	Drones are everywhere nowadays, yet they mostly rely on a pilot with a remote control. In order to operate a fleet of drones automatically, safely and cost effectively, QUMAQ developed the most affordable copter drones that are controlled using the company's custom automated platform, rather than relying on a pilot. By harnessing the power of QUMAQ's platform and custom drones they offer all the tools the customer needs to start using QUMAQ's drones for drone deliveries, aerial pollination, surveillance & monitoring, mapping and 3D modelling and multiple other industries.
Business Model	QUMAQ provides a custom platform, which is an advanced online dashboard that brings the tools such as Advanced Routes Management, Smart Way-Points, Reports and Automatic Pre-flights to manage fleets of drones. Their applications are used in inspection, security and emergency, surveying and mapping, and they are utilized in industrial facilities, mining, oil and gas and seaports. The company also provides aerial delivery and emergency response.
Company Info	<ul style="list-style-type: none"> ■Established in 2018 by Mr. Muhammad Etisam Zafar ■Located in Islamabad and UK ■Website: https://www.qumaq.com/ ■Contact: business@qumaq.com



Integry Your Software's Integration Layer

Problem-solving	Software companies want their users to integrate their app with the ones that the customers already use, but there are 100s of apps and engineering teams have to spend a significant amount of time to build integrations. With more apps being created every day, tech companies need to spend more energy on integrations, taking focus and resources away from improving core features. With Integry, SaaS companies can add a layer on top of their software that allows anyone to create integrations with it.
Business Model	Integry provides pre-made app connectors that app builders could pick and add to their apps. Integry's features include: App Directory that creates a fully-featured, powerful directory of apps, integrations or partners; Workflow Builder that customer can use to setup simple or super complex workflows; App Connector that helps the customer to connect to any API quickly, with minimal code; and Advanced Analytics that gives the customers detailed information on the status of their integrations, users, API calls, apps, templates etc.
Company Info	<ul style="list-style-type: none"> ■Established in 2017 by Mr. Muhammad Nasrullah ■Located in Islamabad, San Francisco and Berlin ■Website: https://www.integry.io/ ■Contact: https://www.integry.io/contact-us



The Pakistani economy is growing rapidly due to factors such as a young population, increased local capital, and increased digital consumption due to improved 3G and 4G technology. If the ecosystem is further strengthened, Pakistan is expected to become a large-scale tech start-up market in Asia.

-Summarized from "Starting up: Unlocking entrepreneurship in Pakistan" McKinsey & Company (2019)

Pakistan's ICT Ecosystem

Industrial Promotion Policy

- The "Digital Pakistan Policy" formulated in 2018 sets 12 important policy goals for promoting the ICT industry.
- Unique ICT promotion efforts at the provincial government level in Punjab.



Export Promotion / Market Access

- Tax holiday on Information Technology export
- Support for entry into the global market of Pakistani companies.
- Market access support by incubators, accelerators, VCs, etc.



Entrepreneurial Culture

- Government-affiliated and industry group incubation institutions educate start-up entrepreneurs and encourage entrepreneurship.
- At some of the universities, entrepreneurship courses and incubators for students were introduced.



Human Resource Development

- Education in the ICT field is conducted at educational institutions such as universities using a curriculum based on the policy of the Higher Board of Education.
- Training freelancers through the federal government's Digiskills.pk and the Punjab provincial government's e-Rozgaar program.



Start-up Support

- Incubation agency of federal IT fund provides entrepreneurship education, management support, financial support, office space, network support, etc. for start-up companies
- Private incubators and accelerators, etc. carry out networking and introduction to customers.



Access to Funding

- Government-affiliated funds and donors provide subsidies to start-up companies. Private angels and VCs invest in start-ups and early stage companies.
- Non-profit organizations and private banks provide invoice discount loans to SMEs.



The Government of Pakistan has been working to promote creative ICT utilization, entrepreneurship and innovation in the ICT field. Private players have joined in to provide access to financing, promote export and support start-ups. Industry, government, and academia are working together to accelerate the growth of the ICT industry.

Local information providers

Name	Address	City	URL
1) Governmental Institutions			
Ministry of Information Technology and Telecommunication (MOIT)	7th Floor, Kohsar Block, Pak Secretariat	Islamabad	https://moitt.gov.pk/
Pakistan Software Export Board (PSEB)	2nd Floor, Evacuee Trust Complex, F-5	Islamabad	https://www.pseb.org.pk/
Natonal Incubation Centers (NIC)	Plot 24-B, Street#6, First Floor, National Information Technology Board, H 9/1	Islamabad	https://nicpakistan.pk/
Punjab IT Board (PITB)	11th Floor, Arfa Software Technology Park, 346-B, Ferozepur Road	Lahore	https://www.pitb.gov.pk/
2) Industry Organisations			
Pakistan Software Houses Association for IT and ITeS (P@SHA)	14th Floor DPL Pvt Ltd, ISE Tower Jinnah Avenue	Islamabad	https://www.pasha.org.pk/
3) Japanese Organizations			
Pakistan Japan Business Forum (PJBF)	7th Floor – City Tower, 33-A Block 6, Main Shara-e-Faisal	Karachi	www.pjbf.org.pk
Embassy of Japan	No. 53-70, Ramna 5/4, Diplomatic Enclave 1	Islamabad	https://www.pk.emb-japan.go.jp/itprtop_ja/index.html
Consulate General of Japan	6/2 Civil Lines, Abdullah Haroon Road	Karachi	https://www.kr.pk.emb-japan.go.jp/j/
JICA Pakistan Office	4th Floor, Serena Office Complex, Plot No. 17, Ramna 5, Khayaban-e-Suhrawardy, G-5/1	Islamabad	https://www.jica.go.jp/pakistan/office/index.html
JETRO Karachi Country Office	2nd Floor, Block-B, Finance and Trade Centre (FTC), Shahrah-e-Faisal	Karachi	https://www.jetro.go.jp/jetro/overseas/pk_karachi/

Embassy of Pakistan in Tokyo

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Embassy of Japan in Pakistan

ICT Information and Inquiry (Economic and Development Section)

Phone: +92-(0)51-907-2500 email: ict-soudan@ib.mofa.go.jp

Pakistan Engineering Council

Search for Engineer portal: <http://hireengr.pec.org.pk/>