Science with Creativity - Technology with Innovation: The Perfect Match

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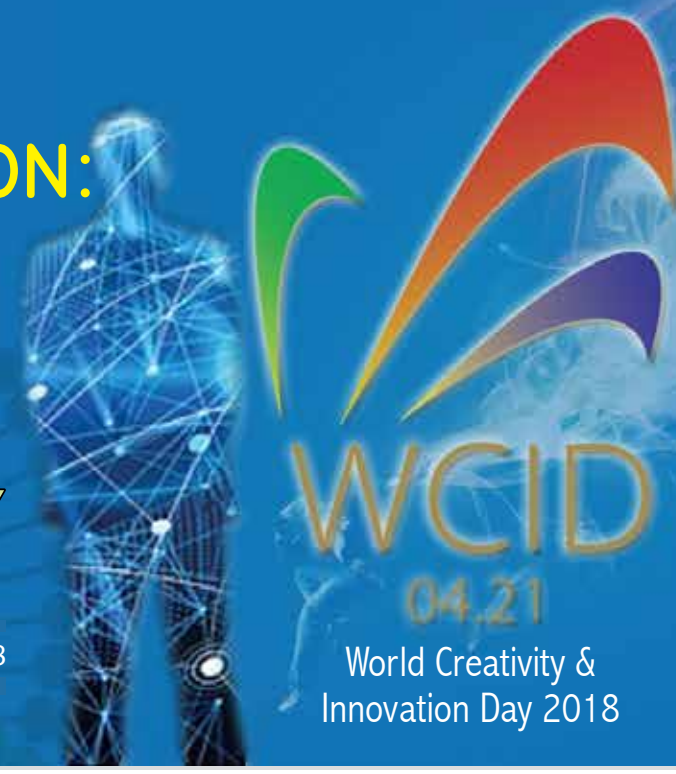

World Creativity and Innovation Day

World Creativity and Innovation Day, April 21, is only one time in the year during which you are invited to welcome and generate new ideas, make new decisions, take new actions and achieve new outcomes that make the world a better place and make people's place in the world better too. Like newly planted seeds, your efforts to make a difference will require nurturing, attention, friendship, patience and pruning. As the new creative year begins remember the impossible takes just a little bit longer and, you can use creativity in problem solving, innovation, and entrepreneurship. Continue to discuss, showcase and share your learnings and achievements throughout the year and to strengthen your creative thinking, innovation and entrepreneurial skills through learning, practice and application to help you prepare for your next World Creativity and Innovation Day, April 21 and Week, April 15-21, 2019. Let's do our best to create the future we want – a decent life for all on a sustainable planet.

On April 21, 2018, the first official World Creativity and Innovation Day (#WCID) will be celebrated. Observed six days after Leonardo da Vinci's birthday and one day before International Mother Earth Day, #WCID is well positioned to encourage creative multidisciplinary thinking to help us achieve the sustainable future we want.

Wealth of Nations

Creativity and innovation, at both the individual and group levels, have become the true wealth of nations in the 21st century, according to the findings of the special edition of the Creative Economy Report "Widening local development pathways", co-published by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the UN Development Programme (UNDP) through the UN Office for South-South Cooperation (UNOSSC).

Creativity and Culture

The creative economy –which includes audiovisual products, design, new media, performing arts, publishing and visual arts– is a highly transformative sector of the world economy in terms of income generation, job creation and export earnings. Culture is an essential component of sustainable development and represents a source of identity, innovation and creativity for the individual and community. At the same time, creativity and culture have a significant non-monetary value that contributes to inclusive social development, to dialogue and understanding between peoples.

Economic Growth Strategies

Cultural and creative industries should be part of economic growth strategies, according to the UNESCO report on culture and sustainable development. These industries are among the most dynamic sectors in the world economy, generating $2.25 billion in revenue and 29.5 million jobs worldwide. In that spirit, countries are harnessing the potential of high-growth areas of the market for economic returns and poverty alleviation.

New Momentum

On #WCID, the world is invited to embrace the idea that innovation is essential for harnessing the economic potential of nations. Innovation, creativity and mass entrepreneurship can provide new momentum for economic growth and job creation. It can expand opportunities for everyone, including women and youth. It can provide solutions to some of the most pressing problems such as poverty eradication and the elimination of hunger.

Background

In its resolution A/RES/71/284, the General Assembly called for international recognition of April 21 as World Creativity and Innovation Day; a day to raise awareness of the role of creativity and innovation in problem-solving and by extension, in the implementation of the Sustainable Development Goals. More than 80 countries joined in support of the resolution.

One Day, One Week

#WCID was first commemorated in over 50 countries around the world on 21 April, 2002. In 2006, #WCID became a week (#WCIW 15-21 April) to give people more time to explore together diverse points of view. April 15, the first day of #WCIW, is also Leonardo Davinci's birthday; an icon of cross disciplinary creativity in the arts and sciences, who exemplified how these fields can inform and enhance each other.

Micro-,Small and Medium-sized Enterprises

As recognized in resolution 71/279 (6 April, 2017), there is a need to focus on the importance of micro-, small and medium-sized enterprises in achieving the Sustainable Development Goals; in promoting innovation, creativity and decent work for all. Sustainable development is a holistic concept that requires the strengthening of interdisciplinary linkages in the different branches of knowledge.

Call to Action

The call to take action in global partnership to promote creative environments, processes and products was included in the declaration adopted in Florence, Italy, at the 3rd UN Educational, Scientific and Cultural Organization World Forum on Culture and Cultural Industries (4 October, 2014).

Resolutions 54/120 (17 December, 1999) on policies and programmes involving youth; 68/220 (20 December, 2013) on science, technology and innovation for development; and 68/223 (20 December, 2013) on culture and sustainable development also support this concept.

The need to initiate a discussion around options available to countries in addressing the many issues that they grapple with in their quest for development is ever pressing. #WCID and #WCIW can serve as a platform for the promotion of examples and best practices that highlight the use of creative thinking and technologies toward the achievement of sustainable development.

World Creativity and Innovation Week

April 15-21, 2018

Greetings all

Leonardo da Vinci's birthday, April 15, opens a time portal for each and every one planet-wide, to free thinking, to consider new ideas, decisions, actions and outcomes – World Creativity and Innovation Week April 15-21.

Feel welcome to use your imagination this week and to combine it with your's and others' knowledge to:

- form new relationships
- establish new standards
- consider different approaches to meeting challenges
- learn new information and practice new skills
- develop fresh insights
- recall past successes from which to build new platforms
- generate positive possibilities and potentials for the future
- go beyond your 'familiar' to embrace something 'strange' (a new restaurant? a different way to hold meetings?)
- try new behaviours that align with the values of contributing to creating a decent life for all on a sustainable planet.

As inspiration, take a look at what is happening around the world here and on twitter #wcid2018, #wciw2018, #worldcreativityweek, #wcid and #wciw.

Do what you can in your home, your work, your school, your community, and/or your nation to inspire joy in creating anew. Each time one of us makes a change, we all benefit.

Find a way to give new ideas a soft place to land.

Show the ways you contribute to the emerging story of planet Earth.

Happy World Creativity and Innovation Week, April 15-21! May you safely and effortlessly ride this week's creative energy to make a helpful difference in your life and the lives of others.

Courtesy: www.wciw.org

Dr. Atta-Ur-Rahman

A national innovation policy

Pakistan – a country with a population of 220 million – has over a 100 million below the age of 20. This gives us a unique window of opportunity for socio-economic development. In order to unleash the creative potential of young people, we need to have a dynamic innovation policy to serve as the central driving force for .....

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Pakistan – a country with a population of 220 million – has over a 100 million below the age of 20. This gives us a unique window of opportunity for socio-economic development. In order to unleash the creative potential of young people, we need to have a dynamic innovation policy to serve as the central driving force for national development plans and national self-reliance.

The word 'Pakistan' must become synonymous with innovation and we should become a country with the highest number of commercialised international patents as a percentage of our population. To achieve this, the implementation of the national innovation policy should be strongly linked with projects across all ministries. This will require fundamental reforms in various aspects of education.

We must create a mindset among our students that prioritises developing problem-solving skills instead of rote learning. The innovation policy should ensure inclusive and sustainable development. It should focus on not just economic competitiveness but also seek to ensure social justice and environmental protection.

The most important factor that can harness the potential of science, technology and innovation (STI) is the presence of a visionary prime minister who understands the critical role that these facets can play in developing a strong knowledge economy. Under the leadership of the prime minister, all the ministries and institutions must be aligned and working in a coordinated manner so that we can transition from our weak agriculture-based economy to a strong knowledge economy that focuses on manufacturing and exporting medium and high-technology products. Such an integrated approach was adopted with remarkable results by Korea under General Park Chung-hee, by China under Deng Xiaoping, by Singapore under Lee Kuan Yew and by Malaysia under Mahathir Mohammed.

There are vast opportunities for Pakistan in various manufacturing sectors, such as engineering goods, computer science and information technology, mineral production, biotechnology products, pharmaceuticals and energy. These have already been identified in a 'foresight' exercise conducted under my supervision which resulted in a 320-page document that was approved by the cabinet in August 2007. We now need to mobilise all ministries so that the five, 10 and 15 year targets set by them are achieved.

Strong national educational institutions and centres of excellence serve as the second important pillar that can help implement a dynamic national innovation policy. High-quality education produces the right citizens who subsequently become harbingers of a new society where innovation and entrepreneurship can flourish. The Korean industrial revolution was based on such reforms in the education sector. These reforms included the establishment of the Korean Institute of Science and Technology (KIST), the Korean Advanced Institute of Science and Technology (KAIST) and the Seoul National University (SNU).

China started to send its brightest students to the top universities in the world in 1978. It is currently sending over 500,000 students each year for PhD and postdoctoral training every year. Over 420,000 of these students returned to China in 2016 alone and were employed in universities and research centres of excellence. They are now making a vital contribution to the Chinese economy. We in Pakistan have been unable to send even 1,000 students abroad each year. The creation of a critical mass of high-quality scientists and engineers – at least 3,000 per million population – is needed. Against the need of some 660,000 scientists and engineers, we actually have only about 30,000.

The third major pillar that promotes a culture of innovation is government funding. The development budget of science and technology in Pakistan is less than Rs2 billion. We are spending a hundredfold more on transportation schemes than we do on science or higher education. This trend is beyond comprehension and illustrates the need for a drastic change in the vision and strategies for development. It is vital to incentivise funding for education and science and facilitate basic research. We must allocate at least between five and six percent of our GDP towards education and at least three percent to science in order to implement a dynamic policy on science, technology and innovation.

The fourth major pillar is government policies. Proper policies can have a huge impact in every sector of development. In 2001, when I was the federal minister of science and technology (including information technology), I introduced a number of measures to promote the IT industry, including a 15-year tax holiday. This resulted in a hundredfold increase in IT services and exports – which increased from $30 million in 2001 to about $3 billion in the present.

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the government needs to create an enabling environment so that our companies can compete with others in the West. The private sector then does the rest. The IT business expansion that occurred during the last 15 years illustrates this view. The same is true for the explosive expansion of mobile telephony in Pakistan after I brought in Ufone as a strong competitor and removed charges for people receiving calls on mobile phones. The phenomenal growth that has occurred is illustrated by the fact that from only 0.3 million mobile phone user in 2001, we now have more than 150 million mobile phone users. Similarly, the policy decisions that we took to uplift higher education when I was the HEC chairman rang alarm bells in India.

In Pakistan, the National ICT R&D Fund – which is to be renamed 'Ignite' – was approved when I was the federal minister of science and technology. It is now the premier national institution dedicated toward promoting an innovation and research commercialisation ecosystem across the country. It aims to make Pakistan a strong player in the knowledge economy by transforming into a Venture Capital (VC) fund that focuses on industrial technologies connected to The Fourth Industrial Revolution'. These include Big Data, Internet of Things, Cloud/ Cyber security, robotics, 3D/4D printing, neuro technology and wearable implants. The company is setting up a series of incubation centres across the country that could impact the entrepreneurial ecosystem in Pakistan by unleashing creativity. Its latest initiative is to set up a centre within Karachi University under the umbrella of the International Center for Chemical and Biological Sciences.

A key aspect of the national innovation policy should be to make the development process inclusive so that wealth does not remain confined in a few hands. Fresh graduates should not just be looking for jobs. Instead, they should have the opportunity to form their own companies and provide jobs to others. This requires the creation of a dynamic ecosystem where innovation and entrepreneurship can flourish. Access to tech parks, venture capital, legal and financial services and professional mentoring to help the youth come up with viable business plans are all key components of such an ecosystem.

The writer is chairman of UN ESCAP Committee on Science Technology & Innovation and former chairman of the HEC. He can be reached at ibne_sina@hotmail.com.

Courtesy: thenews.com.pk

Farooq Ahmed Jalali

"Digital lifestyle is continuous process of innovation & creativity".....

Ignite, the national technology fund, of Ministry of IT and Telecom has launched Digiskills programme to impart training to one million youth, skilled professionals and freelancers. Ignite has awarded Digiskills training .....

"Digital lifestyle is continuous process of innovation & creativity"

Farooq Ahmed Jalali, EVP, South, PTCL

PTCL's partnership with Virtual University is much talked about digital partnership in the country in recent months, can you brief us on it?

Ignite, the national technology fund, of Ministry of IT and Telecom has launched Digiskills programme to impart training to one million youth, skilled professionals and freelancers. Ignite has awarded Digiskills training project to Virtual University of Pakistan and PTCL has been selected as strategic partner through MOU signed with VU. PTCL will assist VU for offering special facilities to the trainees under this program and providing the infrastructure support and digital technologies for this initiative. The program aims to developing specialized skills and imparting knowledge about various freelancing opportunities available internationally and locally.

Incubation Centers in digital world are much hyped area, can you enlighten about it, and what role PTCL is offering for this in Pakistan?

Business incubation is a unique and highly flexible combination of business development processes, infrastructure and people designed to nurture new and small businesses by helping them survive and grow through the difficult and vulnerable early stages of development. Incubation center provides a whole new startup ecosystem for the young and aspiring entrepreneurs.

Incubation centers provide a range of diversified solutions to individuals and business entities to perform their business activities with minimum overheads & maximum efficiency. These centers provide full range of IT and telecom services ranging from office space, physical infrastructure to high-speed internet, international connectivity, voice etc. It gives platform to young budding entrepreneurs to meet and learn from top industry leaders how to grow business. It also provides bespoke learning module, material and resources that helps startups to understand the modalities of setting up & grow business.

Digital lifestyle is a continuous process of Innovation & creativity. PTCL, being the backbone of IT and telecom sector in Pakistan, took the lead in this area of operations by entering into an agreement with KP government for the establishment of incubation centers. The infrastructural services provided by PTCL would help in transforming key sectors like health and education. Moreover, it would improve the lifestyle and contribution in GDP.

Owing to the Data security concerns that come with digitalization; what are the preventive initiatives that PTCL plans to take?

Serving the Enterprise segment, where security is the prime concern amongst our customers today, PTCL's certified IaaS Platform guarantees provisioning of optimal locally hosted cloud service solutions for our customers. Our Cloud services are transforming organizations by virtue of migration towards state-of-the-art technologies resulting in improved efficiency that enables organizations to successfully outperform the competition. This certification is a major step towards PTCL's quest to provide secure and reliable cloud solutions.

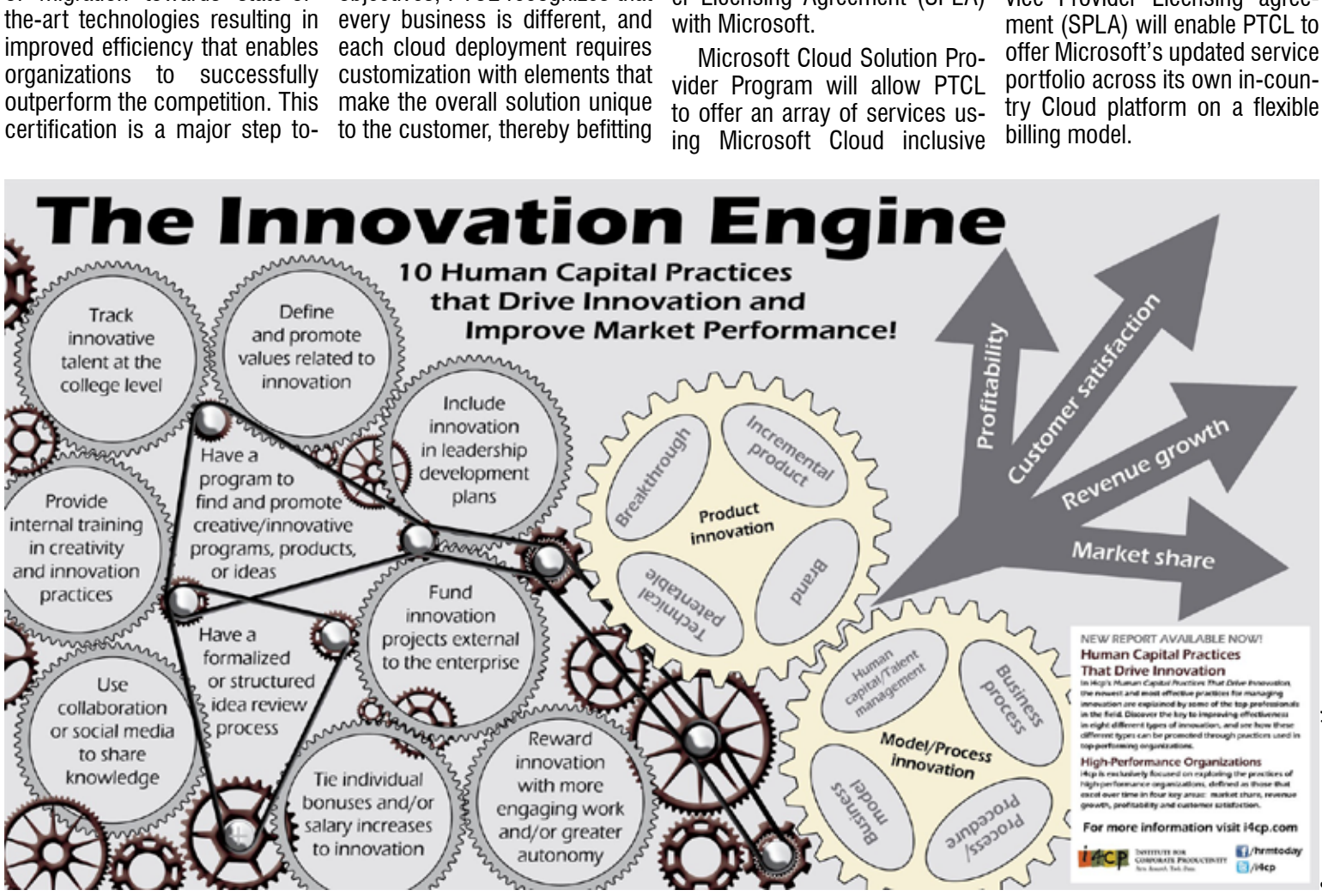
PTCL's Data Centers are the only Tier-3 Certified facilities in the country, while our bandwidth is DDoS-protected, ensuring optimal security & integrity of users' data at all times. Moreover, we have attained ISO 9001 & Payment Card Industry Data Security Standard (PCIDSS) certification v3.2 for our Cloud (IAAS) offering, which is yet another milestone for PTCL's Cloud Services, assuring our clientele security compliance as per international standards.

PTCL entered into a partnership with Microsoft, tell us something about it, and how would it complement PTCL's current offerings?

PTCL has stepped forward to bring one-window solutions, from serving connectivity needs to becoming an end-to-end business partner for IT requirements of the local market. Facilitating organizations to achieve their objectives, PTCL recognizes that every business is different, and each cloud deployment requires customization with elements that make the overall solution unique to the customer, thereby befitting

individual business strategies. To enhance our Cloud Services portfolio, PTCL has signed a Cloud Solution Provider (CSP) partnership and Service Provider Licensing Agreement (SPLA) with Microsoft.

Microsoft Cloud Solution Provider Program will allow PTCL to offer an array of services using Microsoft Cloud inclusive of Microsoft Office 365, Azure, Dynamics 365, Enterprise Mobility Suite, Power BI, Windows & other value-added services across Pakistan. Microsoft Service Provider Licensing agreement (SPLA) will enable PTCL to offer Microsoft's updated service portfolio across its own in-country Cloud platform on a flexible billing model.



Courtesy: www.content.i4cp.com

Umair Ali Khan

Why Pakistanis are among the least innovative in the world

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It's a pity that Pakistan was ranked at 131 out of 141 countries in the 2015 report of the Global Innovation Index — which explores the impact of innovation-oriented policies on economic growth and development.

The Ministry of Science and Technology, upon inquiry from the National Assembly, stated in a report that the reasons for the country's poor ranking include:

1) Low percentage of Gross Domestic Product (GDP) for science and development.
2) Low standards of science education in our educational institutions.

Emphasising only on Pakistan's low ranking, the Ministry of Science and Education fell short of mentioning why 61,000 researchers with 10,670 PhDs in Pakistan, which is by no means a minuscule figure, are not significantly contributing to the country's technological development.

Even though the Higher Education Commission (HEC) has sent thousands of scholars abroad for PhDs since 2002 and spent billions of rupees, the history of Pakistan's innovation index over the past five years reveal interesting facts.

The country's GII index has declined significantly from 2011 (the maximum), despite the fact that thousands of PhDs have returned to Pakistan after completing their degrees during this period.

This is alarming.

It shows that instead of lamenting over the deteriorating condition of basic science education in Pakistan, we must search for the problem elsewhere.

Switzerland, the top-ranked country on GII's list, has 57 per cent of researchers from foreign countries due to the numerous incentives offered to them. But in Pakistan, there are no special packages, allowances or incentives for researchers.

HEC's fallacious policies

The HEC's fallacious policies also contribute to frustration among researchers in Pakistan. Most of the PhDs in Pakistan are employed in universities controlled by the HEC.

The HEC did introduce a Tenure Track System (TTS) with high payscales and other incentives for PhDs. However, this system is seriously flawed and entails significant modifications in its policies and academic infrastructure.

It was meant to be based purely on performance in teaching and research but on the contrary, the TTS faculty in most universities has engaged in administrative and non-academic activities, consequently destroying its fundamental purpose.

Even though the TTS faculty enjoys a higher salary than those on regular pay scales, their contribution towards research is next to nil due to their excessive involvement in administrative activities.

With a minor raise in salary after completing a PhD, every researcher on a regular pay struggles to get promoted to be eligible for financial benefits.

HEC's current criterion of promotion emphasises only on quantity, with little or no emphasis on quality, by asking researchers to produce a number of publications.

This is, perhaps, the major reason as to why not even a single Pakistani research journal in the field of engineering has received international exposure, or impacted the scientific community at large.

The policies and the review process of most Pakistani research journals are flawed.

To get promoted and justify the effort put to obtain a PhD degree, a researcher is left with no option but to publish in Pakistani research journals to fulfill the HEC's criteria of promotion.

Even a highly-talented researcher may be compelled to participate in this unproductive activity, which has no scientific significance.

It also prevents him/her from taking part in activities which are prerequisites for productive research, for example, establishing research groups to attract indigenous and foreign researchers, collaborating with other scientific communities to exchange innovative ideas, organising scientific events to promote research and dissemination of scientific knowledge.

Under these circumstances, improving Pakistan's ranking on the innovation list is analogous to a fairytale coming true.

Courtesy: medium.com

Research funding agencies like the HEC, Pakistan Science Foundation and the National ICT R&D Fund are trying to bridge the gap between industries and universities, most of the research projects funded by them turn out to be mere works of engineering, rather than any novel scientific work

Pakistan's scientific progress is also hindered by the huge collaboration gap between universities and industries. A large number of research projects in universities are necessitated and funded by industries across the world.

While research funding agencies like the HEC, Pakistan Science Foundation and the National ICT R&D Fund are trying to bridge the gap between industries and universities, most of the research projects funded by them turn out to be mere works of engineering, rather than any novel scientific work.

The main reasons behind this lethargic system are:

1. A lack of disseminating appropriate information to industries
2. Lack of motivation and scientific awareness
3. Little to no initiatives of collaboration with funding agencies and/or universities.

The plight of basic education in our educational institutions is also pathetic. Let alone government institutions, even expensive private educational institutions in Pakistan lack syllabus homogeneity, a carefully designed curriculum without logical fallacies, laboratory facilities and an emphasis on rational thinking.

The flawed systems of admission and examination in many universities just add to the misery.

Merely funding people to pursue a PhD in foreign institutions without paying attention to the dismal standards of basic education is akin to constructing a skyscraper with a vulnerable foundation.

To prevent this, we need to bring revolutionary changes in our basic education system. Besides revisiting our elementary school syllabus and improving the academic infrastructure, we need to ensure that teaching jobs are well-paid to attract qualified candidates.

Our children must be encouraged to learn and practice science in the same way as religion — this is the only way we can expect to excel in innovation.

Dr. Umair Ali Khan is working as an associate professor in the Department of Computer Systems Engineering at Quaid-e-Awam University of Engineering, Nawabshah.

Courtesy: dawn.com

Dr. Aftab Ahmad

Is there a creativity and innovation crisis in Pakistan?

Creativity and Innovation are very important for any nation to develop, progress and lead. Those nations and countries that are innovative are the leading countries in the world. According to Global Innovation Index 2016.....

Is there a creativity and innovation crisis in Pakistan?

Dr. Aftab Ahmad

Creativity and Innovation are very important for any nation to develop, progress and lead. Those nations and countries that are innovative are the leading countries in the world. According to Global Innovation Index 2016, Pakistan was ranked at 119th position among 128 countries. They ranked 83 different parameters for innovation in all the countries and ranked the countries on the basis of score obtained. This indicates Pakistan is far behind in Innovation and this is one of the reasons that we are facing and trying to solve the same problems which we were facing many decades ago. If we really have to make Pakistan a leading country in the world, we have to promote creativity, social and scientific innovation. According to above mentioned statistics, Pakistan is in Innovation crisis and we can move out of the crisis easily by managing and channelizing our resources. Pakistan is blessed with both human and natural resources; the only need is to manage them in a way that we can use them effectively and in more sustained way.

How we can promote creativity and Innovation in Pakistan? We can focus on following five major areas:

Education

Pakistan not only have low literacy rate in the world, but the quality of education is also not good. This includes both primary and higher education. In order to make Pakistani people innovation, we have to make changes specifically in our primary education as currently our curriculum and teaching methods are outdated. We have to promote inquiry based learning, learning through problem solving and learning by doing. Our current education is based on rote system which can only give us good grades but not innovation so there is great need to change our education system. In higher education, we are standing at 124th position among 145 countries, which is also alarming. Although, recently there is good investment in higher education from government side, but still there is much more to do. We have to provide our students more resources and freedom of work as this is how we can bring more innovation and creativity.

Discussion Forums

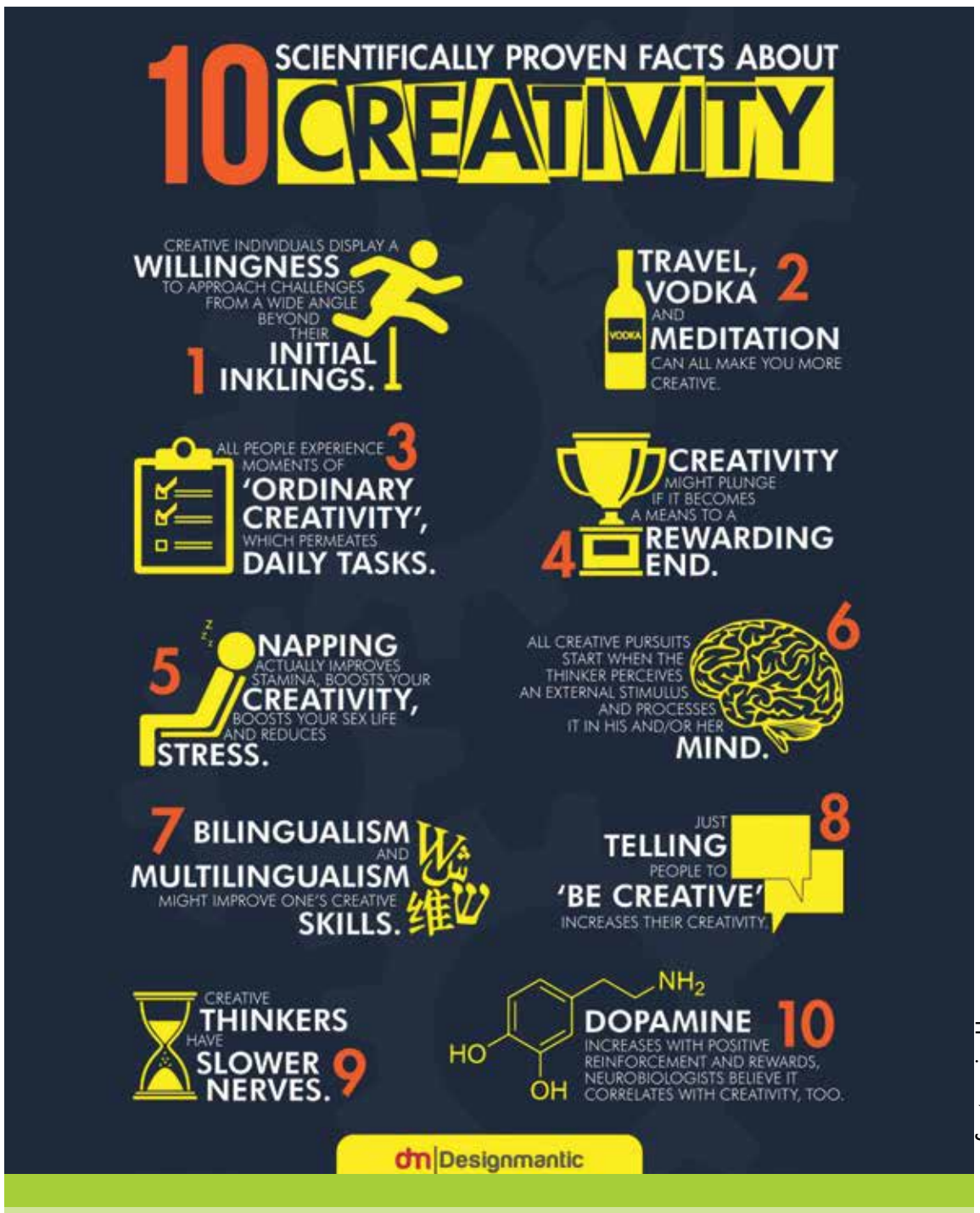
Interdisciplinary discussion forums always lead to innovative ideas. This is what I have learned after joining more than 50 international forums. In developed countries, they bring together people from different background and ask them to think and solve current and future problems, they work together, brainstorm and bring many innovative ideas, experts mentor their work and they start many innovative enterprises and bring social change. There is dire need to have such thinkers and discussion forums in Pakistan.

Academia-Industry linkage

Academia industry linkage is very important to fuel innovation. The academic developments should be translated into industry and industry problem should come to academia. If there is good linkage, there will be a win-win situation. We lacked this culture in Pakistan but recently through ORIC offices in universities, technology development fund of HEC and efforts of IRP, the inertia has broken and linkages are being established. At this stage, we should set some model;portray success stories so we could develop more interest for academia industry linkage.

Innovation Ecosystem

Why there are so many successful startups in USA but not as much in Pakistan? Why the success of startup is more in Europe and USA compared to developing countries, the difference is innovation ecosystem. The developed countries and especially USA has attracted talent across the world and utilized that talent in an innovation supportive environment which most of developing countries including Pakistan lack. In our educational institutes, research centers and business enterprises, we have to develop an innovation ecosystem so we could not only promote innovation but also set examples for others. Recently NAYS Pakistan has started a seminar series on “creating innovation ecosystem in universities” and hopefully it will help to develop such system in our academic and research institutes.



Courtesy: visual.ly

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Innovation Foundation

Just like Pakistan has Science Foundation (PSF), we should have an ”Innovation Foundation” to promote innovation in the country. The foundation should involve all the stakeholders (policy makers, academia, industry, ORICs and other related bodies) and make dedicated efforts to promote creativity and innovation in the country. If we will have a dedicated body with good resources to promote innovation, I am confident that soon Pakistan ranking will be improved and we will be able to solve our national problems in better way.

It will be great if we could work on above mentioned areas, if not, I think on individual level, we should make efforts to promote both social and scientific innovation in the country as we are facing so many issues (energy, environment, water, agriculture, etc.) and it will be us who have to solve these issues. If we will work by applying scientific and innovative approaches, we can manage and solve most of our problems.

Courtesy: draftab.wordpress.com

Jibran Bashir

Global Innovation Index and Pakistan

The Global Innovation Index (GII) is an annual ranking of countries by their capacity for, and success in, innovation. It is published by Cornell University, INSEAD, and the World Intellectual Property Organization, in partnership with other organizations and institutions, and is based on both subjective and objective data .....

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The Global Innovation Index captures elements of the national economy that enable innovative activities: (1) Institutions, (2) Human capital and research, (3) Infrastructure, (4) Market sophistication, and (5) Business sophistication. Two output pillars capture actual evidence of innovation outputs: (6) Knowledge and technology outputs and (7) Creative outputs.

Courtesy: wipo.int

Allocations for research and development expenditure have always remained low in Pakistan. The current allocation is only 0.29% of GDP, which is far below world average as most developed countries spend between 2–4% of their GDP on research. A total number of 60,699 researchers are working in Pakistan with only 10,670 PhDs which is very low as compared to developed countries

Global Innovation Index (GII) Report of 2016

The Global Innovation Index 2016 (GII), co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO, an agency of the United Nations). Global Innovation Index 2016 ranks the innovation performance of 128 countries and economies around the world.

Rank of Pakistan in Global Innovation Index (GII) Report 2016

Pakistan continues to suffer due to lack of innovation, as the country was ranked at 119 out of 128 countries by the Global Innovation Index for the year 2016. Pakistan was positioned at the bottom 10 on the list this year, similar to 2015 where it was placed at 131 out of 141 countries. Pakistan was also the worst performing country in the South Asia region as well, with next door neighbor India grabbing 66th place, moving up as much as 15 places in the GII. Whereas, Bangladesh was placed at 117, Nepal at 115, Sri Lanka way ahead at 91st spot, respectively.

Switzerland was the most innovative country on the list, with Sweden, UK, US and Finland making the top five. Whereas, rounding out the top 10 nations were Singapore, Ireland, Denmark, the Netherlands and Germany. The world second largest economy, China made history by breaking into the top 25 for the first time, moving up from 29th position in 2015.

Why Pakistan is at extremely lower end in Global Innovation Index?

Why Pakistan is at extremely lower end in Global Innovation Index? Where are the policies of government for innovation and creativity? Is our government interested in Research and Development activities in Pakistan? Is our education system allowing our students to think creative? Are we as a nation developing our children in a way that they can think out of the box? Are we working on the minds of our people? Are we ready to away from emotional talks to rational and logical thinking? As per my observation there is only one answer of my all above questions and that is a BIG "NO". If someone is not agreeing with me, go above in this blog and see the index report's statistics again.

There are various factors which positioned Pakistan towards the least, technologically, innovative countries in the world. For example, allocations for research and development expenditure have always remained low in Pakistan. The current allocation is only 0.29% of GDP, which is far below world average as most developed countries spend between 2–4% of their GDP on research. A total number of 60,699 researchers are working in Pakistan with only 10,670 PhDs which is very low as compared to developed countries.

Further, in Pakistan there are no trends of establishing research groups to attract indigenous and foreign researchers, collaborating with other scientific communities to exchange innovative ideas, organizing scientific events to promote research and dissemination of scientific knowledge.

In our country Pakistan, the education system at school level itself has to be changed for encouraging creativity and innovation rather than the traditional memory based system.

Last Words

Innovation requires a different combination of creative and logical thinking. In my view if we want to improve Pakistan's position in Global Innovation Index than we have to start developing the habit of creative thinking in our children from homes and schools. We have to encourage our children to ask questions for their mind exercise. On the other hand, government must increase the budgets of Research and Development in country and encourage people to do researches in various fields to produce more and more knowledge. In short, Pakistan is in need of a creative or divergent thinking for innovative solutions to face global challenges and competitive world.

Courtesy: jibranbashir.com

Jayme Cellitioci

Creativity and science: the perfect couple

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Creativity and science: the perfect couple

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Alongside a national agenda to increase STEM (science, technology, engineering, and mathematics) literacy, there is a parallel track of growing attention being placed on creativity.

Conversations such as “What is the role that creativity plays in science?“ have transitioned from esoteric musings to home-page-feature articles, giving the public an opportunity to embrace creativity as a topic that extends outside the art room.

In a 2010 IBM research study involving over 1,500 CEOs from more than 60 countries, the number-one core leadership competency for future success was identified as — drum roll, please — creativity.

Individuals in STEM leadership positions are tasked to apply novelty to the way in which they go about visioning, strategizing, and planning.

If we are to expect the children of today to become tomorrow’s STEM leaders and professionals, we need to look at what we are doing to nurture, grow, and prepare them for these roles. We have to look at how we are raising creative and critical thinkers who are equipped with inquiry-based and scientific reasoning skills. This is what wakes me up, along with the rest of the Camp Invention staff, each morning.

As a trained practitioner and facilitator of creativity from the International Center for Studies in Creativity at SUNY Buffalo State, and having spent my career as an informal science educator in a variety of settings, I have lived in the overlap of this Venn diagram of creativity and science for the last decade.

In this space I have observed a multitude of relationship-building “playgrounds” for creativity and science. Here are five that rise straight to the top:

1. Galileo’s Problem

Problem finding is a key component of the creative problem-solving process. In The Evolution of Physics (1938, p. 95), Einstein and Infeld offered the following:

The formulation of a problem is often more essential than its solution, which may merely be a matter of mathematical or experimental skill. To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science.

This assertion was stated in relation to Galileo formulating the problem of determining the velocity of light but not solving it. Effective problem solving requires working on the right challenges, a particularly important consideration in the highly competitive arena of obtaining resources for STEM endeavors.

2. Unlocking Solutions

I have had the opportunity to ask National Inventors Hall of Fame (NIHF) inductees, as well as Collegiate Inventors Competition finalists, to fill in the blank of the following phrase: “Inventing is_____.” The majority of the Inductees, including Eric Fossum, inventor of the CMOS Active Pixel Image Sensor Camera-on-a-Chip, filled in the blank with “problem solving.”

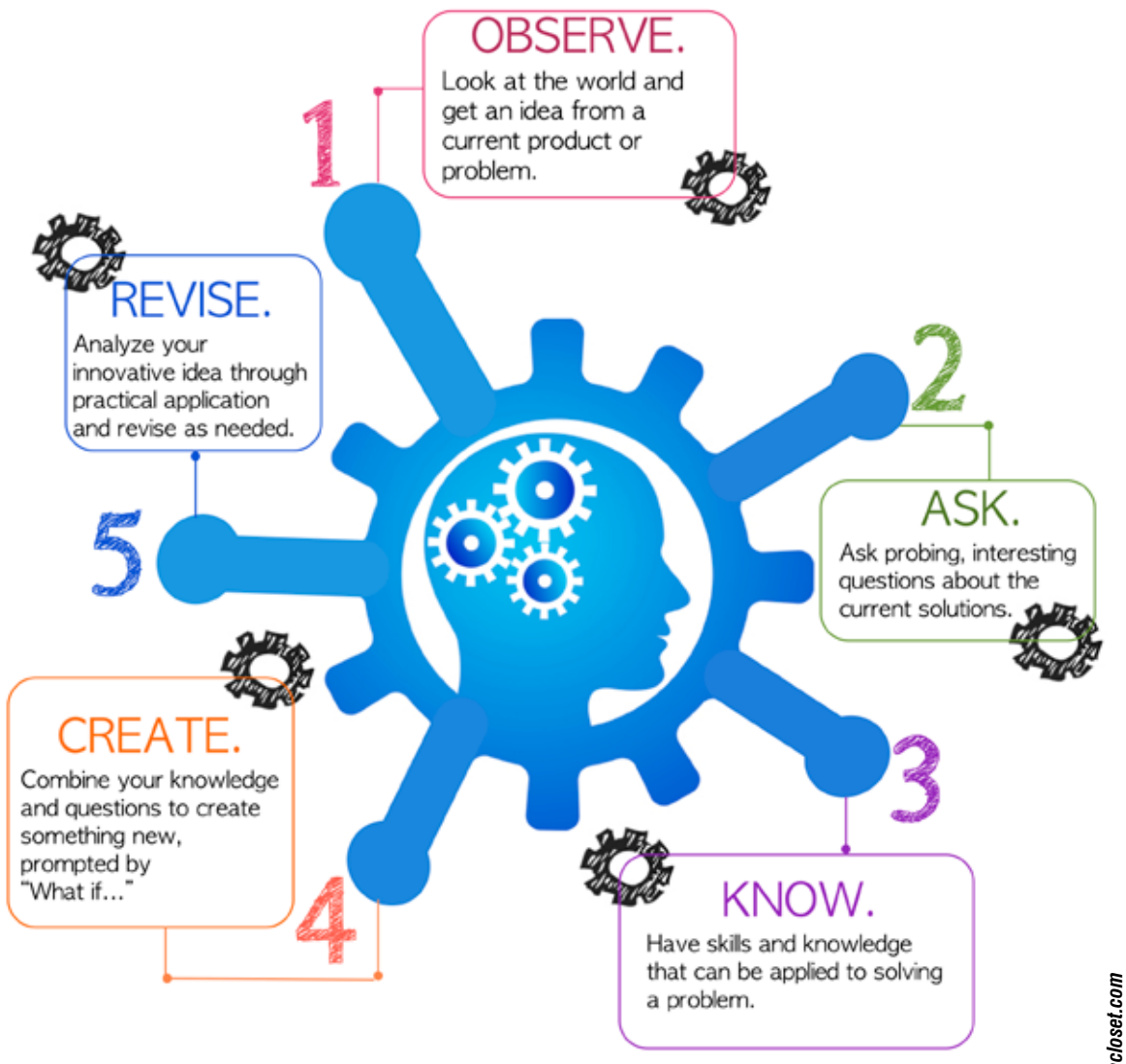
If inventors use STEM as a toolbox to turn their ideas into realities, and if problem solving is a primary tool in the box (housed in the cool part that folds out when you open the top), then we can think of creativity as the key to unlock the toolbox.

3. What Is in the Box?

If you ask any scientist about the exact nature of the work that they do, it is very likely that they will describe the tools that they use. The creativity field is prolific in tools to enrich, focus, and enhance the work of scientists and science educators. At base level, there are fantastic idea-generating tools, decision-making matrices, prioritization techniques that make planning enjoyable (or at least less painful), and workshop formats to ignite innovation. Beyond traditional tools, however, some of the most powerful offerings from the field of creativity involve the nature of the language that is used to find, navigate, and solve challenges (which really are opportunities awaiting solutions).

4. Making, Creating, and Collaborating

One of the most exciting playgrounds for creativity and science has been cultivated by the Maker Movement — DIY meets fabrication meets collaboration and STEAM-based community building. Individuals who would not necessarily describe themselves as scientists or technologists are accessing equipment that is allowing them to express their creativity in ways once thought to be restricted to the Jetsons.



Courtesy: educationcloset.com

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In addition, children’s out-of-school-time programs, like this summer’s line-up from my home base of Camp Invention, and workshops in museums, such as the Exploratorium’s Tinkering Studio, are creativity and innovation incubators for dynamically exploring STEM.

5. Designing Change

Social innovation is on the rise, and design thinking is serving as its rocket ship. It is a platform where creativity and STEM work hand-in-hand, and the rewards for their integration have the potential to change billions of lives.

As I was writing this blog post, I asked my 3-year-old what he thought creativity and science have to do with each other. With a glimmer in his eye, he said, “I think that is insperiments.”

I remember seeing the same glimmer in the eye of NIHF inductee Robert Willson, inventor of the plasma screen, as he filled in the blank of my interview statement starter. He said, “Inventing is creativity.”

I look forward to further insperimenting and exploring how we might fill in more of the blanks of STEM by recognizing and fostering its relationship with the 21st-century skill of “creativity.”

The author is Creativity, Innovation, and Free-Choice Science Learning Practitioner.

Courtesy: huffingtonpost.com

Saquib Ahmad

Creating momentum for digital transformation in Pakistan

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Creating momentum for digital transformation in Pakistan

Saquib Ahmad

From empowered farmers and mobile banking to enhanced predictive analysis in economic policy making, Pakistan is on the cusp of a digitization drive. Rarely has a new technology approach held as much promise and potential.

Connectivity and GDP growth are two measures of a country's progress in driving digital transformation. The first is a tangible measure of how far the country has come in the initiative and the second of the benefits derived. And as an emerging nation in the process of digitalization, these are both drivers and bottlenecks on the path to the creation of a digital Pakistan.

A key challenge that we face is low literacy rates, which restrict the penetration of digital services and limits the scope of their transformative potential. But this, on the other hand, is also a big opportunity.

Using literacy drivers are a key part of the solution. Pushing for the creative use of technology can also broaden the engagement of the non-literate, with digitally enabled services. This is certainly boosted by the rapid expansion of mobile connectivity infrastructure in the country. The current penetration of 77% is on an upward trajectory but last mile connectivity of services requires further prioritization.

Drawing insights to drive transformation

With the assistance of Oxford Economics, SAP recently concluded a study on digital transformation that surveyed more than 3,000 senior executives from around the world, including emerging economies like Pakistan. 84% of those surveyed believed that digital transformation was key to their company's future survival. However, only 3% of those surveyed had already digitally transformed their businesses, with the remainder still in the planning or testing stage.

Companies that had substantially enacted their digital transformation process experienced an average rise of 23% in revenue. 80% of these early adopters expected increased profitability and 85% an increase in market share, as a result.

These findings are important for our consideration in Pakistan as the emphasis on digitalization takes root across services and sectors in the country. And as an industry stakeholder, my role has seen various initiatives that have been set in motion to drive the transformation of the country into a digitally enabled one.

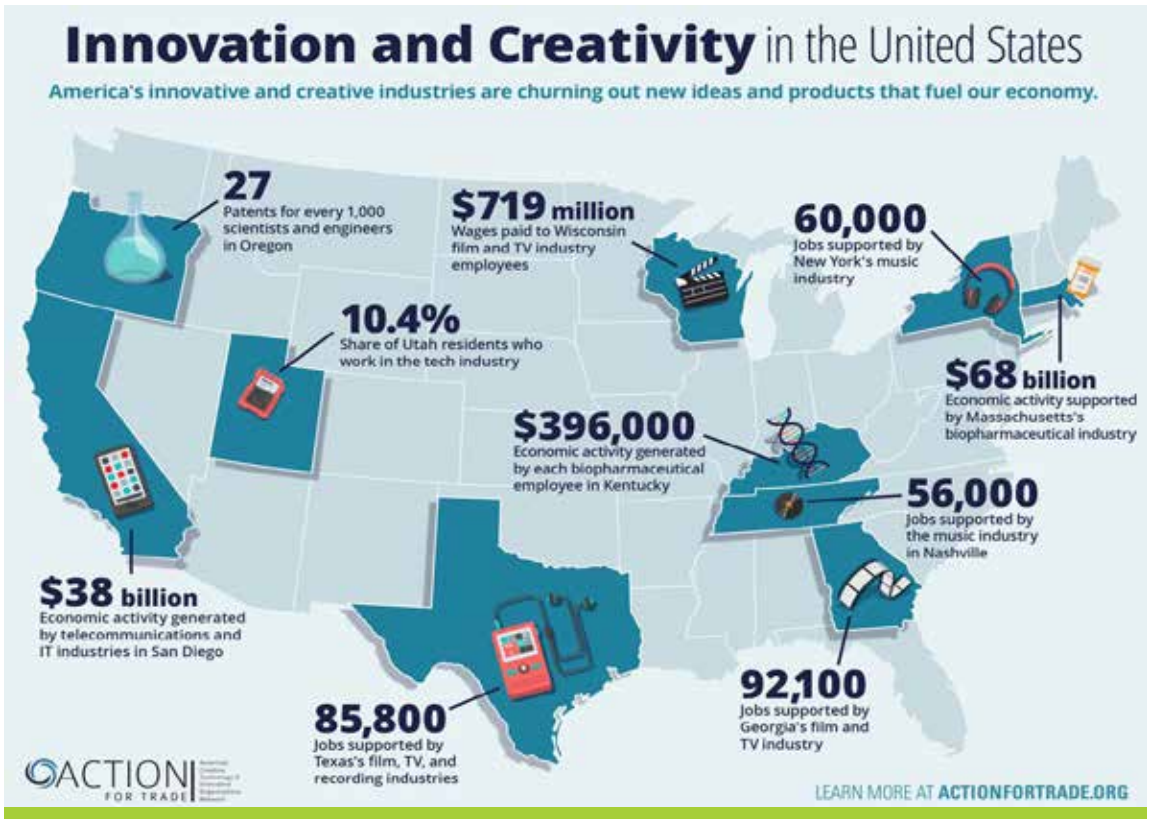
A different meaning for different sectors

Digital transformation assumes different proportions in terms of change and meaning across various sectors, which warrant a customized approach to bridge opportunity with success. In the banking sector, for instance, the convenience of using online alternatives, smartphone apps, and increased connectivity are all driving a rise in digital banking services. Financial institutions are now using predictive analytics in order to better understand their customers. In turn, customers are actively seeking enhanced services and benefits made possible by digitization.

Interestingly, customized and targeted services are also being offered to subscribers based on the trends reflected in their transaction histories. The delivery of pensions and other social benefits is being digitalized to promote efficiency and transparency. At a more macro level, the Finance Ministry is engaging with technology vendors to build a digital dashboard that will streamline policy-making and decisions.

The agriculture sector is another important segment for change, given its importance to the country's economy. Mobile phone connectivity is enabling the provisioning of weather reports and other relevant information being provided to farmers, via voice messages in Urdu, overcoming the lack of literacy in remote parts of the country.

Pakistan's education sector has had a mixed engagement with digitalization. Emphasis on digital technology has lagged in the past, but schools and universities are now being empowered to actively embrace the digital world. Graduate programs are assisting students in pursuing an education in relevant technologies overseas and in their absorption into an emerging workforce, on their return.



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The key drivers for the emergence of a digital Pakistan

Clearly, the benefits of digital transformation, while universally acknowledged, are still at a nascent stage in their enactment in Pakistan. So the journey to becoming a truly digital country needs to run in parallel to the emergence of a digitally enabled world at large and would require the following support pillars:

- A comprehensive digital transformation plan was developed using a consultative model and by involving stakeholders with cross industry experience.
- Higher rates of general literacy are building a mature digital technology workforce will be key drivers in enabling the digitization of Pakistan's economy.
- Creative and adaptive technologies serve as a bridge to the future. While literacy drives are critical to support widespread adoption of digital technologies, existing technologies need to be adapted to allow the participation of a larger share of current demographics.
- Investment in infrastructure emphasizes a deeper penetration of digital connectivity will enhance the effect of the transformation and create more widespread synergies
- Linking local transformation to emerging global trends helps derive optimal benefit from each stage of digitization, by linking global economic opportunities to local entrepreneurs across industry sectors.
- Identifying the potential for digitization to digitally enhance existing processes to yield short-term benefits as well as in redefining long-term possibilities.
- Adopting a digital first mindset that places digital engagement approach ahead of a "product-first" approach help changes the mindset

Proactive engagement can drive truly transformative change in Pakistan. The emergence of a digitally empowered population and economy, however, hinges on the effective integration of digital services, innovation, and an entrepreneurial spirit.

A good start for making the change lies in unlocking changing long-held mindsets. In the words of renowned motivational speaker and author, Steve Maraboli – "once your mindset changes, everything on the outside will change along with it." Similarly, Pakistan too can leapfrog into a future of prosperity and realized potential by driving this change.

The author has more than more than 19 years' experience in leading successful sales teams in the Telco & IT industry in Pakistan.

Courtesy: digitalistmag.com