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ENGINEERING PULSE

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Challenges and Prospects for the Construction Industry in Pakistan

INTRODUCTION: Pakistan has been one of the major players in the global building industry for decades. The building industry is a vital component of economic development in any country. However, in recent times, Pakistan's construction sector has been dealing with a significant and complex challenge – Inflation and rising material costs are merging. The construction industry's significance in Pakistan exceeds economic contributions. Its complex web of linkages with various upstream and downstream industries underscores its role as a powerful catalyst for economic growth, subject to the formulation of effective policies. Pakistan's construction sector yields a substantial GDP contribution of up to PKR 380 billion. Moreover, Unresolved disputes related to housing and construction are worth an astounding Rs. 1.1 trillion, according to the Association of Builders and Developers.

EMERGING CONSTRUCTION SECTOR IN PAKISTAN: Pakistan's construction sector has experienced an impressive expansion in recent years, with this upward trajectory projected to continue. The Government's consistent focus on housing initiatives, strategic infrastructure enhancement, and the monumental China-Pakistan Economic Corridor (CPEC) has created a fertile ground for growth in the construction sector.

CONSTRUCTION'S ECONOMIC CONTRIBUTIONS: According to figures from the World Bank, Pakistan's construction industry accounts for about 2% of the country's GDP. – a figure that is poised for an upward trajectory. The convergence of factors such as population growth, urbanization, and foreign investments has moved the construction industry into a central position within Pakistan's economy. The State Bank of Pakistan estimates that the GDP contribution of the construction sector increased to around 9.6% of total output in 2020, a remarkable increase from the 6.5% reported in 2018. The surge is attributed to heightened industrial investments, significant infrastructure ventures, and a surge in residential and commercial projects.

For Pakistan's economy and building industry, the CPEC represents a revolutionary force

Driving forces behind construction industry growth

INFRASTRUCTURE DEVELOPMENT: The bedrock of economic expansion in Pakistan hinges on strong infrastructure. The government's announcement of ambitious infrastructure projects encompassing highways, airports, and energy initiatives is poised to galvanize demand for construction services, thereby igniting sectorial growth.

HOUSING INITIATIVES: Pakistan struggles with a critical shortage of affordable housing. In response, the government had undertaken multifaceted efforts exemplified by the Naya Pakistan Housing Scheme. This ambitious endeavor aims to deliver affordable housing for low-income households, a rise in housing demand that is set to drive the construction sector's growth.

CHINA-PAKISTAN ECONOMIC CORRIDOR (CPEC): For Pakistan's economy and building industry, the CPEC represents a revolutionary force. Linking China's western regions to the port of Gwadar in Pakistan, CPEC's vast infrastructure projects offer numerous opportunities for sectorial growth.

TECHNOLOGICAL PROGRESSION: Building Information Modeling (BIM) is one example of how technology is changing the building industry. These innovations optimize design, process efficiency, and stakeholder collaboration.

Sharp rise in material costs causes 40% jump in project expenses

Challenges confronting Pakistan's construction industry

Despite remarkable strides, the construction industry in Pakistan faces formidable challenges that hinder optimal performance within the current market dynamics. Key challenges include:

ESCALATING MATERIAL COSTS: The cost of completing a project has significantly increased, with steel prices rising 96% between January 2021 and June 2022 and cement prices increasing by over 72% during the same time period, increasing the overall expenditure by at least 40%. As a result, the construction industry is currently having difficulty pricing its housing units.

REGULATORY COMPLEXITIES: The heavily regulated construction landscape necessitates builders to navigate intricate permit and approval processes across numerous government agencies.

Proposed remedies to overcome construction industry challenges

The journey toward sustained growth in Pakistan's construction industry necessitates strategic and concerted interventions.

POTENTIAL SOLUTIONS ENCOMPASS:

• Strategic infrastructure development can serve as the most important tool for minimizing challenges, catalyzing smoother project execution and fostering industry expansion.

• Simplifying the regulatory landscape can quicken project timelines, fostering efficiency and profitability in the sector.

• By nurturing a skilled labor force through education reforms and vocational training programs, Pakistan can bridge the labor shortage gap and ensure seamless industry growth.

• Addressing corruption at various levels of the construction sector can enhance transparency, amplify investor confidence, and foster an environment conducive

• Governmental financial support mechanisms, incentives, and investment avenues can boost builders' capacities and cultivate a more robust construction industry.

The trajectory of Pakistan's construction industry growth is filled with challenges demanding strategic interventions. A multifaceted approach, encompassing infrastructure investments, regulatory simplification, skill development, anti-corruption measures, and financial support, will be important in charting a trajectory of sustained growth. Collaborative efforts by builders, the government, and stakeholders hold the potential to fortify Pakistan's construction landscape, ushering in a phase of robust and enduring growth. In the rising of challenges lies an opportunity to transform the construction sector into a powerful engine of economic progress for Pakistan.

A Tribute to Prof. Engr. Dr. Abdul Rehman Memon - A Visionary Leader Remembered

There are people in the fields of engineering and education whose achievements have a lasting impact on their community and who represent the qualities of true heroes. Prof. Engr. Dr. Abdul Rehman Memon was unquestionably an impressive personality among these figures. It was the morning of 7th August, 2023 when a news came from Canada that Engr. Abdul Rehman Memon had passed away by the will of Allah. Dr. Memon was a visionary leader who was appointed to the respected position of 8th Vice Chancellor of Mehran University of Engineering and Technology Jamshoro (MUET). His leadership brought in significant improvements that permanently changed the direction of the University's profile and impact. He was driven by a kind yet strong determination.

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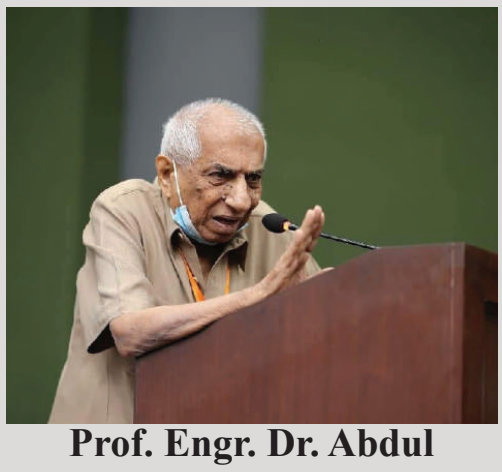


Prof. Engr. Dr. Abdul Rehman Memon

Significant landmarks attained throughout his journey of life

Significant milestones were accomplished by MUET, under the wise leadership of Dr. Memon, demonstrating his creative thinking and firm commitment. The university's adoption of ISO 9001 standards not only showed a dedication to quality but also promoted an excellence-oriented culture. The institution's switch to an annual academic schedule brought some organization and order, and other academic improvements further improved its reputation.

The establishment of the Textile Engineering Department in Mehran University of Engineering and Technology, Jamshoro was a significant development that proved Dr. Memon's creative thinking, which encouraged diversity and new academic vistas.

Dr. Memon was born in historical city of Sindh, Hala on February 23, 1941. His roots remained strong throughout his journey despite leaving his birthplace. In addition to being a skilled electrical engineer, he also had another notable quality: he was a Hafiz-e-Quran, a bearer of the holy verses committed to heart. His constant commitment to his faith shaped a holistic approach to his work, which combined with his career goals in an effortless manner.

Among his numerous accomplishments, none shone brighter than his literary contribution, "Telescoping Al-Quran for Applications in Engineering." He attempted to develop the link between engineering and spirituality in the pages of this wonderful book, demonstrating his boundless curiosity and research. He also served as the Dean Faculty of Engineering Science and Technology at Hamdard University Karachi for 11 years. He was the Founder Vice-Chancellor of Quaid-e-Awam University of Engineering, Sciences & Technology, Nawabshah in 1996. He also served as a Rector at Newports Institute of Communication and Economics (NICE), Karachi.

Dr. Memon's contributions continued to enlighten the path for many others as the chapters of his life came to a close. Our thoughts go out to his family, friends, and the whole MUET, QUEST and NICE communities as we pause today to remember him and honor his legacy. All who had the good fortune to benefit from his insight, counsel, and unrelenting commitment to the pursuit of academic and engineering achievement feel the loss left by his departure very strongly.

May Allah SWT envelop him in His mercy and grant him a lofty place in Jannat-ul-Firdous. May Dr. Abdul Rehman Memon's lasting legacy serves as a constant light, inspiring future generations.

Navigating Challenges and Celebrating Success with Engr. Prof. Dr. Vali Uddin

Introducing you to the remarkable Engr. Prof. Dr. Vali Uddin, an esteemed academician whose educational journey paints a picture of dedication and excellence. Graduating from Dawood University with a Bachelor's degree was just the beginning. Dr. Vali Uddin's thirst for knowledge led him to Boston University (USA), where his exceptional abilities earned him a Master's degree on a coveted scholarship. Subsequently, his intellectual pursuits took him to Northeastern University (USA), where he earned a PhD, solidifying his status as a true scholar.

Drawing from his wealth of knowledge and academic experiences, Dr. Vali Uddin found his calling in teaching. His teaching tenure at distinguished institutions like Iqra University, NUST, and Hamdard University showcases his prowess in shaping the minds of future generations. Presently, as the Vice-Chancellor at Sir Syed University of Engineering and Technology, he spearheads the institution with a unique blend of passion and purpose.

In a world where education plays an instrumental role in societal progress, Dr. Vali Uddin stands as an embodiment of academic excellence and inspiration. His journey serves as a beacon for those who seek to traverse the path of knowledge with unwavering dedication and a burning passion to make meaningful contributions to education and research in the field of engineering.

Engr. Prof. Dr. Vali Uddin
Vice Chancellor (SSUET)

Engineering Pulse: Thank you for joining us today. Can you please share with us your personal journey and the struggles you faced on your path to success?

Dr. Vali Uddin: Certainly! I come from a lower-middle-class family, and our financial background wasn't very strong. My father worked tirelessly to support our family, and we had to make significant efforts to move forward. However, our family strongly believed in the power of education, and they supported us in pursuing our studies. This clear focus on education became our driving force.

During my school and university days, I did not only focus on my studies but also took the initiative to teach others. I was then known as someone who would help anyone with their academic challenges. This experience of teaching and assisting others greatly enhanced my learning and understanding of different perspectives.

Upon completing my master's degree and pursuing a Ph.D., I applied the knowledge and skills I had gained. I ventured beyond the academic field and took on administrative roles such as being a head of department, dean, director, registrar, and now vice-chancellor. These experiences allowed me to develop diverse thinking skills and contributed to the success I have achieved in my life.

Unfortunately, a large number of faculty members lack industry exposure

Engineering Pulse: Hearing about your journey and the influence you've had in both academia and administration is motivational. Moving on to your professional experience, how has been working for various organizations influenced your perception of the sector?

Dr. Vali Uddin: I had the chance to work for two different businesses, and those experiences gave me important insights. One business was well-established and followed strict regulations and processes, whereas the other was a large but chaotic business that was having problems. I came to realize how crucial it is to have clear policies and processes set up that are aligned with the goals and missions of a company.

Additionally, throughout my time working for a company, my practical knowledge and the connection between the classroom and real-world applications became clear. Unfortunately, a large number of faculty members lack industry exposure, which makes it challenging for them to connect theory to reality. I learned how to put theoretical principles into practice firsthand through my employment in the industry, which was helpful to my students.

It's essential to identify the issues impacting the industry and make use of the resources universities have to offer to reduce the gap between industry and academia. Government and business cooperation and support are necessary. While certain universities and businesses are making their efforts, it is essential to create an entire system of cooperation to promote significant change.

Private and government universities must work together to strengthen the education system

Engineering Pulse: Thank you for sharing your insights. Bridging the gap between industry and academia is vital for our country's development. Speaking of collaboration, how do you perceive the relationship between private and government universities? Does it affect our education system, and what measures can be taken to improve it?

Dr. Vali Uddin: Private and government universities must work together to strengthen the education system. The Higher Education Commission (HEC) and provincial HECs have realized the significance of this collaboration. Many private and public universities are already engaging in joint projects and conferences, fostering an environment of cooperation. Universities should have general policies that facilitate collaboration, and initiatives like the National Idea Bank and research and innovation commercialization can further promote partnerships. While some universities are making progress, it is essential to establish a comprehensive ecosystem of collaboration across the entire education system. This requires universities to move beyond competition and focus on collective growth. We universities are interconnected with each other and we share good relationships and we promote and attend events held in universities. We have been engaged with Mehran University of Engineering and Technology, Jamshoro as well.

Creating an environment that fosters growth and provides promising prospects for students to stay in Pakistan

Engineering Pulse: Collaboration between universities, regardless of their affiliation, is indeed crucial for progress. Shifting gears, there's a growing trend among students to pursue higher education and employment opportunities abroad. What are your thoughts on this, and how can we encourage students to stay in Pakistan and contribute to its development?

Dr. Vali Uddin: The desire to go abroad for higher education and job opportunities stems from various factors, including perceptions of limited opportunities and financial constraints. To encourage students to stay in Pakistan, we must create an environment that fosters growth and provides promising prospects.

As decision-makers, we must focus on improving the quality of education, creating job opportunities, and addressing the brain drain issue. We need to make our universities more competitive, ensure they offer relevant programs, and provide state-of-the-art infrastructure. Simultaneously, efforts should be made to create an ecosystem that supports job creation and entrepreneurship. By doing so, we can inspire and retain talented individuals who can contribute to Pakistan's development.

Engineering Pulse: You mentioned that you have to be competitive to grow but don't you think that we should be updated to be able to compete but courses in universities are not updated for very long. What are your thoughts about it? Is there anything you have done or are planning to do to make the betterment?

Dr. Vali Uddin: Universities' courses are a bit older, yes. But they do carry immense value in engineering. The concern for updated courses is valid as the market is growing and requires modern ways to come up with solutions.

So, there are two types of courses, Core and Elective courses, the core courses are those which are common and are defined by the Pakistan Engineering Council (PEC) for all the disciplines of engineering accordingly which cannot be changed by any university whereas, elective courses are to be decided by the university itself to teach. So, Sir Syed University of Engineering and Technology (SSUET) has tried to include courses that are aligned with the industry's requirements so the students can get better skill sets to compete in the market.

Success must be earned through hard work

Engineering Pulse: Do you have any suggestions from your personal life experience for students especially those who are currently enrolled or have recently graduated from engineering disciplines?

Dr. Vali Uddin: The younger generation of today often lacks the belief in the value of struggle; instead, they constantly seek shortcuts. However, it is important to understand that there are no quick fixes in life. Success must be earned through hard work and dedication. Each individual possesses unique potential and follows a distinct path. To achieve our goals, we must be willing to endure hardships and take responsibility for our choices. Furthermore, by assisting others in their learning journeys, we not only contribute to their growth but also enhance our knowledge. Through this collective effort, the entire system thrives and prospers.

Engineering Pulse: It's evident that collaboration, investment in education, and creating a conducive environment are crucial for the progress of our country. Do you have any favorite quotation or poetry that constantly inspires you?

Dr. Vali Uddin: **Of course, my all-time favorite poetry has to be Iqbal's,**

"خودی کو کر بلند اتنا کہ ہر تقدیر سے پہلے
خدا بندے سے خود پوچھے بتا تیری رضا کیا ہے"

Engineering Pulse: Thank you sir for your time. We are grateful for the opportunity to be engaged in meaningful discussions with you and to learn about your personal as well professional life as well your aspirations.

Logix Solutions and Pakistan Engineering Council Unite for Engineering Excellence

In a game-changing move, Logix Solutions and the Pakistan Engineering Council (PEC) have joined forces through an Agreement of Understanding (AoU) signed on August 15, 2023. This landmark event, took place at PEC Regional Office, Karachi, sets the stage for a dynamic collaboration that promises to elevate engineering education and professional growth.

Under the AoU, Logix Solutions generously offers complimentary training facilities to PEC-registered engineers, empowering them with cutting-edge skills. Additionally, exclusive discounts on various services will be extended to both PEC-registered engineers and dedicated PEC employees, fostering a culture of continuous development.

At the signing ceremony, **Mr. Afaque Ahmed**, Director Operations and Team Lead for Training at Logix Solutions, led the charge alongside esteemed engineers from Logix. PEC was represented by its Vice Chairman, **Engr. Mukhtar A. Sheikh**, and prominent Governing Body Members **Engr. Mohsin Ali Khan** & **Engr. Abdul Rehman Shaikh**.

Highlighting the occasion, Engr. Mukhtar A. Sheikh awarded Mr. Afaque Ahmed Khan an appreciation shield, acknowledging Logix Solutions' dedication. In return, Mr. Afaque Ahmed presented shields and souvenirs to commend PEC officials for their commitment.

This partnership signifies a pivotal moment for engineering in Pakistan, promising a brighter future through knowledge-sharing, innovation, and unity.

Unlocking Success: Logix Solutions "Effective CV Writing and Interview Skills" Workshop Empowers Future Professionals

Logix Solutions conducted a two-day workshop **"Effective CV Writing and Interview Skills"** on August 5th and 6th, 2023, at Sir Syed University of Engineering and Technology, Karachi. This workshop's main goal was to give participants the skills they needed to write a professional CV and perform well in job interviews. The workshop witnessed 60 to 70 active participants from diverse backgrounds, including undergraduate students from different universities and institutions as well as graduates who were currently unemployed.

Ms. Samiya Hameed was the facilitator and **Mr. Afaque Ahmed** shouldered the responsibilities of moderator for the workshop.

The event was graced by **Engr. Prof. Dr. Valli Uddin** - Vice-chancellor, SSUET, Karachi as a Chief Guest and **Engr. Ali Salman Syed** - Managing Director, SAF International (Pvt) Ltd, **Mr. Munawar Hameed** -Academic Counselor, PAF KIET, Karachi, **Prof. Dr. Syeda Sadaf Akber** - Dean Faculty of Allied Health Science, Malir University, Karachi **Mr. Qurban Ali Odhano** - Human Development Professional, **Mr. Khalid Jameel Ansari**-Renowned Trainer & HR Specialist, **Ms. Syeda Ailia Fatima Rizvi** - Corporate Trainer, HSEQ and **Mr. Khuram Shaikh** - HR specialist & Coordinator PEC GIT Program (Sindh)

The Chief Guest of the Event appreciated the services of Logix Solutions and urged the need for such workshops. The participants thoroughly enjoyed and gained valuable insights from the workshop, praising its interactive nature.

Hello 'Beep!' Pakistan Introduces Exciting New Messaging App, a Homegrown WhatsApp Alternative

Syed Amin Ul Haque, Ex-Federal Minister of Information Technology and Telecommunications, launched the beta version of **Beep Pakistan**, Pakistani messaging Application. According to the sources, after a year everyone would be able to use the app.

The Beep Pakistan Application, developed by the National Information Technology Board (NITB), is the Pakistani version of the popular voice, text, and video-sharing platform, WhatsApp.

The Ex-Minister additionally marked the inauguration of the new web-based E-office platform version. During his address at the ceremony, he highlighted that the Beep Pakistan application offers a range of features, such as document sharing, secure messaging, quick audio and video calls, as well as conference calls. He emphasized that
the application's data will be safely hosted within Pakistan.

The app's data will be stored under the supervision of the National Telecommunication Cooperation (NTC), with an initial trial period of one month for the platform.

Throughout this duration, the application will be accessible to all government officers and officials, with the NITB actively attending to the application's requirements based on input from these officials. Following its effective implementation within the government sector, the app will be made available to the general public after a year.

He expressed that the app aims to modify the communication methods of government employees and improve their productivity.

AoU Between PEC and Pak PWD Ignites Opportunities for Interns

On August 15th, 2023, An Article of Understanding (AOU) was inked between Pakistan Engineering Council (PEC) and Pakistan Public Works Department (South) at PEC Regional Office, Karachi for PEC GIT Program.

Engr. Mohsin Ali Khan (Convener, PEC Media Cell) shared insights with Engineering Pulse. According to him, this AoU shall open the doors for over 100 interns to be placed within the operations of Pak. PWD across Sindh.

Engr. Khan highlighted that this collaboration presents a remarkable opportunity for budding engineers to gain hands-on experience by engaging with ongoing projects at Pak. PWD. This practical exposure promises to hone their skills and deepen their comprehension of engineering principles within a real-world context.

Engr. Nadeem Ahmed Shaikh (Staff Officer at Pakistan PWD) lauded PEC's vision in launching the Graduate Internship Training (GIT) program. He expressed appreciation for Engr. Mukhtar A. Sheikh, Vice Chairman of PEC, acknowledging his concern and instrumental role in creating employment avenues for young Pakistani engineers. This initiative is poised to shape a new generation of engineers capable of contributing significantly to the nation's development.

Engr. Mukhtar A. Sheikh along with Engr. Mohsin Ali Khan, Engr. Abdul Rehman Sheikh (Members PEC Governing Body) and Engr. Muhammad Salik Siddiqui (Deputy Registrar PEC). Engr. Nadeem Ahmed Shaikh (Staff Officer, Pak. PWD) and Engr. Sanjay Kumar (Joint Administrative Officer) represented Pak. PWD.

Energy Crisis in Pakistan: Effects, Challenges and Sustainable Solutions

Recent years have seen a serious energy crisis in Pakistan, which has had a negative impact on its economy, society, and overall economic trajectory. Frequent power outages, slowed down industrial development, and interrupted residents' daily lives are all results of the energy crisis. This essay investigates the wide-ranging effects of Pakistan's energy crisis and looks at workable, long-term remedies to help the country move toward a more positive energy future.

UNVEILING THE EFFECTS OF THE ENERGY CRISIS:
The effects of Pakistan's energy crisis are felt throughout many different industries, creating a wide range of difficulties:

PERSISTENT POWER OUTAGES AND ECONOMIC BACKLASHES:
Nationwide power outages that irregularly stop daily activities and business operations are the most obvious sign of the energy crisis. Reduced productivity, financial losses for businesses, and decreased foreign investments are the results of these disruptions. Businesses frequently struggle to meet deadlines and complete orders, which hinders economic progress.

INDUSTRIAL STAGNATION:
Due to the energy shortage, sectors like manufacturing and textiles that depend on a steady supply of energy face significant obstacles. Diminished global competitiveness results from rising operational costs and disturbed production cycles. As a result, several industries have reduced their operations or moved their activities, which has a negative impact on employment rates and overall economic stability.

SOCIETAL DISCOMFORT AND DISRUPTION:
The energy shortage disproportionately affects Pakistani homes, which are subjected to long power outages that interfere with daily activities and crucial services. Lack of energy hampers heating and cooling systems during harsh weather, putting residents at risk of discomfort and health problems. Inadequate power supply also has a negative impact on the healthcare and education sectors, lowering the level of accessibility and quality of services.

ECOLOGICAL RAMIFICATIONS:
In the wake of the crisis, Pakistan's search for energy solutions has resulted in a greater reliance on fossil fuels, which has contributed to ongoing environmental damage and air pollution. Increased carbon emissions and reliance on non-renewable resources worsen climate change, endangering people's health and the ecological balance for the foreseeable future.

SUSTAINABLE SOLUTIONS: CHARTING THE PATH FORWARD:
Despite the significant challenges posed by the energy crisis, Pakistan's energy system can be transformed by a number of attractive, long-term solutions:

Pakistan is ideally suited for utilizing solar and wind energy

EMBRACING THE POTENTIAL OF RENEWABLE ENERGY:
A sustainable way to meet energy needs is to make investments in renewable energy sources including hydroelectric, solar, and wind power. Due to its geographical location, Pakistan is ideally suited for utilizing solar and wind energy, reducing its dependency on limited fossil resources and reducing carbon emissions.

PROPAGATING ENERGY EFFICIENCY AND CONSERVATION:
The key to solving the situation is to increase energy efficiency across all sectors. It is possible to significantly reduce energy usage by implementing energy-efficient technologies, streamlining industrial processes, and encouraging energy-conscious behavior. Campaigns to raise public awareness are essential for promoting wise energy use.

SMART GRID INTEGRATION:
Power supply management, control, and monitoring can be improved by integrating smart grid technology into the energy distribution framework. Smart grids' real-time data processing reduces waste and promotes a more dependable energy supply. This technology paradigm has the potential to reduce power shortages and increase operational effectiveness overall.

Government should prioritize sustainable energy development through policy implementation

CATALYZING POLICY REFORMS AND INVESTMENT:
It is crucial that the government implements policies that prioritize the development of sustainable energy, encourage private investment, and simplify regulatory frameworks. The switch to cleaner energy sources can be accelerated up by creating a supportive environment for renewable energy projects and providing financial incentives.

CONCLUSION:
The energy crisis in Pakistan is a complex problem with wide-ranging effects on both society and the economy. A brighter, more sustainable energy future, however, may be marked by the adoption of environmentally friendly measures, which include the incorporation of renewable energy, amplification of energy efficiency, and implementation of policy reforms. The potential to overcome the crisis and promote a green, more prosperous nation is noticeable if individuals, communities, and governing bodies work together.

Sustainable Energy Approach: How the Engineering Sector of Pakistan Challenges the Assumption

The engineering sector in Pakistan is challenging conventional energy assumptions and embracing a sustainable energy approach to address the growing demand for clean power. Pakistani engineers are actively involved in various renewable energy projects, such as solar, wind, and hydropower facilities, harnessing the nation's abundant natural resources to produce environmentally friendly energy. This shift in focus contradicts the prevailing belief that fossil fuels are the sole solution to meet energy demands. Engineers are making significant investments in renewable energy infrastructure and incorporating energy-efficient practices across diverse industries.

Localizing Energy Production: The Dawn of Distributed Energy Systems:

A departure from the traditional energy paradigm involves the exploration of distributed energy systems, which prioritize localized energy production through mechanisms like small-scale solar power systems, micro grids, and tailored energy storage solutions. This decentralized approach challenges the long-standing dominance of large centralized power plants, while also promoting efficiency and resilience in the energy sector. Engineers are at the forefront of developing smart grid solutions, which enhance demand-side management, facilitate seamless integration of renewable energy sources, and improve overall power distribution. The incorporation of real-time monitoring, grid stability mechanisms, and optimized energy consumption are among the benefits of smart grids.

Innovative Energy Storage Solutions:

Engineers are addressing the inherent intermittency of renewable energy sources by advancing energy storage technologies, including batteries and pumped hydro storage. These innovations ensure a consistent power supply, effectively negating the misconception that renewable energy cannot reliably meet energy demands. Moreover, sustainable design principles are being deeply integrated into infrastructure development, with a focus on reducing energy consumption, lowering emissions, and minimizing environmental impact.

The engineering community is actively engaging with local communities to promote the adoption of renewable energy sources and energy-efficient practices. Through educational campaigns, workshops, and capacity-building initiatives, engineers are challenging the notion that citizens have limited influence over the future of energy. By empowering communities, engineers are playing a pivotal role in driving positive change towards sustainable energy solutions.

Advancing Renewable Energy Technologies:

Ongoing research and development efforts are aimed at enhancing the effectiveness and affordability of renewable energy technologies. Engineers are continually improving the performance and efficiency of solar photovoltaics, wind turbines, and other renewable sources. These advancements directly challenge the preconceived notions that renewable energy technologies are prohibitively expensive or unreliable when compared to conventional energy sources.

In the pursuit of a stable and continuous energy supply, engineers are exploring novel energy storage technologies, such as flow batteries and compressed air energy storage devices. By effectively storing excess renewable energy for later use, these innovations counter the skepticism surrounding the consistent availability of renewable energy sources.

Integrating Renewables: Enhancing Energy Management and Grid Integration:

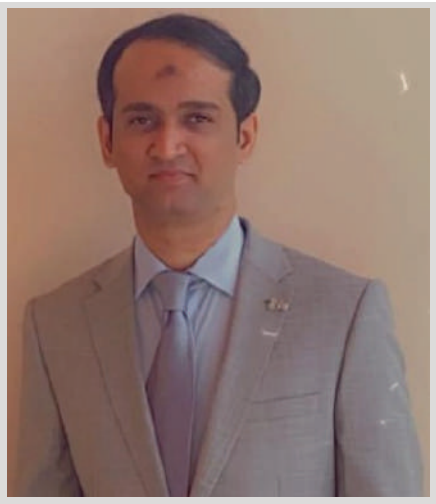
Advancements in renewable energy management and grid integration are also a focal point of research and development. Thanks to smart grid technology and sophisticated control systems, renewable energy can be efficiently distributed and integrated into existing grid infrastructures. This dispels the misconception that the addition of renewable energy to the grid is inherently disruptive.

Furthermore, engineers are investigating innovative strategies to optimize natural resource utilization and improve energy efficiency. Research into waste-to-energy techniques and biomass conversion technology demonstrates the potential to transform organic waste into sustainable energy sources. Engineers are also placing emphasis on sustainable transportation systems, intelligent urban design, and energy-efficient structures to reduce overall energy consumption.

Engineers are not merely focused on technological advancements; they are actively exploring political and financial strategies to incentivize the adoption of sustainable energy sources. Through the examination of market regulations, tax incentives, and subsidies, engineers contribute to the creation of an enabling environment that supports the expansion of renewable energy.

A Global Movement: Shaping the Future of Energy:

Through their continuous research and innovation, engineers are reshaping the energy landscape not only in Pakistan but also on a global scale. By enhancing the efficiency, affordability, and reliability of renewable energy technologies, engineers are laying the groundwork for a future where renewable energy takes center stage. This transition promises to reduce carbon emissions, promote environmental stewardship, and ensure a sustainable energy future. The engineering sector in Pakistan is at the forefront of challenging energy-related assumptions, driving renewable energy initiatives, implementing energy-efficient practices, engaging communities, and contributing to a more sustainable and secure energy future for the nation.

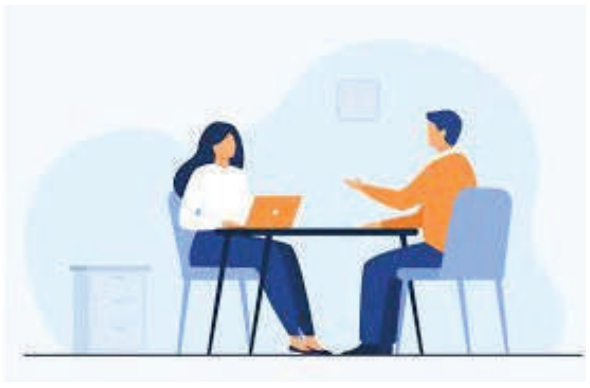


Engr. Dr. Muhammad Nawaz Iqbal

Dr Muhammad Nawaz Iqbal is an academician. He is serving as an assistant professor at business administration department of Sir Syed University of Engineering and Technology. He also have a 13 years of corporate experience and have 260 publications include research papers, articles, patents, book, case studies.

Essential Soft Skills for Young Engineers in Pakistan

In the ever-evolving landscape of engineering, the chasm between academia and industry remains a significant challenge. Bridging this gap is crucial, and one way to do so is by empowering young engineers with essential soft skills that go beyond technical expertise. These skills not only enhance their professional growth, but also foster effective collaboration, innovation, and adaptability in a dynamic work environment.



COMMUNICATION SKILLS:
Effective communication is paramount for engineers and I consider this as the most important lacking among young engineers whether oral or written; most of the engineers are unable to communicate effectively. The ability to convey complex technical solutions in a clear and concise manner is vital. It helps in building strong relationships with clients, colleagues, and stakeholders. Engineers must develop the knack for translating intricate jargon into understandable language, making them valuable assets to any project. To cultivate this skill, young engineers can participate in workshops, practice public speaking, and seek feedback to refine their communication style.

PROBLEM-SOLVING SKILLS:
Engineers are problem solvers by nature, but refining this skill is essential. The capacity to approach challenges analytically, break them down into manageable parts, and develop innovative solutions is invaluable. Engaging in real-world problem-solving exercises, collaborating with mentors, and seeking diverse perspectives can enhance this skill.

ORGANIZATIONAL SKILLS:
Effective organizational skills is the cornerstone of productivity. Engineers often deal with complex projects, timelines, and resource management. Developing strong organizational skills ensures tasks are completed efficiently, deadlines are met, and resources are optimized. Utilizing time management techniques, using digital tools for task tracking, and learning project management principles can significantly enhance organizational abilities.

LEADERSHIP SKILLS:
Leadership skills transcend hierarchy. Engineers need leadership skills to guide projects, inspire teams, and drive innovation. Developing leadership qualities involves taking initiative, being accountable, and inspiring others through your actions. Seeking out leadership roles in college organizations, volunteering, and seeking mentorship from experienced professionals can hone these skills.

TEAMWORK SKILLS:
Engineers rarely work in isolation; collaboration is fundamental. The ability to work seamlessly within diverse teams, leveraging each member's strengths, is crucial for successful project outcomes. Engaging in group projects, joining engineering clubs, and participating in cross-disciplinary activities during college can cultivate teamwork skills.

ADAPTABILITY:
The engineering landscape is constantly evolving. Adaptability is the key to staying relevant. Young engineers must be open to learning new technologies, methodologies, and industry trends. Continuously updating skills through workshops, online courses, and staying current with industry publications is essential for staying adaptable.

CREATIVITY:
Innovation drives progress in engineering. Cultivating creativity allows engineers to generate fresh ideas, design novel solutions, and contribute to cutting-edge advancements. Engaging in design challenges, brainstorming sessions, and exploring diverse fields of engineering can nurture creativity.

Khurram Shaikh

Khuram Shaikh is a seasoned HR professional, trainer and educationist. Having a rich experience in different roles of HR and education makes him a prominent role model for others. He holds an MBA, MS in Management Science, LLB, and he is also an ongoing Ph.D. pursuit.

INTERPERSONAL SKILLS AND EMOTIONAL INTELLIGENCE:
The ability to understand and connect with colleagues, clients, and stakeholders on a personal level is crucial. Engineers should be empathetic, adaptable, and capable of handling conflicts constructively. Developing emotional intelligence through self-awareness, active listening, and empathy can improve interpersonal skills.

By focusing on these essential soft skills, young engineers in Pakistan will definitely make progress in their fields.. It's not just about excelling in technical aspects; it's about being well-rounded professionals who can communicate effectively, collaborate seamlessly, and adapt to the ever-changing engineering landscape. By actively working on these skills, young engineers will not only enhance their career prospects but also contribute meaningfully to the growth and development of the engineering industry in Pakistan.

Goodbye to Zoom and Google Meet - a Game Changing WhatsApp Feature

WhatsApp has introduced a groundbreaking feature, allowing users to share their screens during video calls, revolutionizing the chatting and calling experience. This functionality mirrors capabilities found in platforms like Zoom and Google Meet, enabling individuals to display their screens to their conversation partners.

The development of this feature wasn't rushed it underwent months of careful refinement. In May, a selective set of people had the opportunity to test it. Utilizing it is simple. By tapping the Share button, users can opt to display a specific app or their entire screen. Designed for both novice and experienced users, its user-friendly nature ensures effortless integration.

While some may speculate if **WhatsApp is positioning itself against giants like Zoom and Google Meet**, this screen sharing feature beyond the context of business .Its versatility lends itself to various scenarios, from aiding family members with technical glitches to collaborating on creative projects and sharing content in captivating ways.

WhatsApp's commitment to enhancing video calling is underscored by its introduction of landscape mode support, enhancing visual engagement and showcasing the platform's attention to aesthetics and functionality.

Following the pattern of prior updates, WhatsApp intends to gradually introduce the screen sharing feature. Although it may not be instantly accessible to all, it will ultimately reach Android, iOS, and Windows desktop users. This measured approach underscores WhatsApp's dedication to delivering a seamless and impactful feature to its diverse user base.

Essentially, WhatsApp's revolutionary screen sharing addition emphasizes the company's ongoing endeavor to enrich user experiences. By incorporating this feature, WhatsApp solidifies its leadership in communication technology. The platform's evolution holds the promise of more exciting advancements, providing users with enhanced methods to connect, collaborate, and share. Those familiar with Zoom will find this feature familiar, simplifying the process of sharing visual content during conversations.

However, it's important to note that WhatsApp's global availability poses a strong challenge to Zoom and Google Meet. To stay competitive in the market, Zoom and Google Meet must innovate significantly in order to rival WhatsApp's widespread appeal and user base.

Russia Launches its First Moon Mission After 50 Years

MOSCOW: Russia launched its first probe to the Moon in almost 50 years on Friday, a mission designed to give fresh impetus to its long-struggling space sector, which has been also hit by sanctions since the conflict in Ukraine.

Moscow has launched the Luna-25 mission, beginning its first lunar mission since 1976. The Vostochny Cosmodrome saw the launch of the rocket carrying the Luna-25 probe, as seen in live footage provided by the Russian space agency Roscosmos.

On August 16, the probe is expected to launch into an orbit 100 kilometres above the surface of the moon. It is then planned to land on August 21 north of the Boguslawsky crater, according to an official release.

High-ranking Roscosmos official Alexander Blokhin recently stated in an interview that this landing is historic because it is the first lunar landing to take place on the southern pole. All previous landings have only taken place in equatorial areas. The Luna-25 spacecraft, which is planned to spend a year on the Moon, will be collecting and analysing soil samples. In addition, it will conduct extensive scientific research, according to data from the Russian space agency.

The first mission of Russia's new lunar programme will be represented by this launch. This project starts at a time when the war in Ukraine is challenging Roscosmos' relationships with the West. Russia is therefore promoting cooperation with China instead.

AI Takes Center Stage in the Battle Against Online Crimes Targeting Children

By quickly identifying and stopping crimes, artificial intelligence (AI) helps combat internet crimes against children (ICAC). A "topic query lexicon" and "topic query searches" are tools that quickly locate accounts involved in trading child sex abuse materials, providing law enforcement with crucial evidence. **The network analysis of AI helps agencies share their findings and fight ICAC by revealing criminal connections**.

While Google's Hash Matching API and Microsoft's Photo DNA can detect offensive content, privacy and legality issues still exist. Human verification is still necessary, particularly when dealing with "sextortion." Digital literacy initiatives and the removal of exploitation content are part of social media child protection strategies. Children who are educated are better able to identify risks, which ensures online safety and protects the weak from exploitation.

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