

INDUSTRIAL VISION

INNOVATION. INDUSTRY. PROSPERITY

VOL 5.0 | 2018

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INDUSTRIAL VISION

Volume 4.0 | 2017

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INDUSTRIAL VISION

Team Industrial Vision 5.0

Coordinator



Yushef Shrestha

Editor in Chief



Nitesh Kumar Barnawal

Financial Coordinator



Manish Jung Khati

Editors



Bidusi Khadka



Sujan Kharel



Mohan Rijal



Sulav Shrestha

Financial Controllers

PRINCIPAL CORRESPONDENTS

Aayushi Bhattarai
Ishwor Nakarmi
Mirage Shrestha
Narayan Adhikari

Rakesh Chaudhary
Sabin Wagle
Rajan Kandel

Samiksha Aryal
Rakesh Chaudhary
Subash Nagarkoti

Sagar Khatiwada
Bhupesh Regmi
Utsav Acharya

Industrial Vision is an ISSN 2392-4330 certified annual industrial magazine published by Society of Industrial Engineering Students (SOIES) Nepal. The magazine shares research works, various interesting, timely and significant contents to address the broad spectrum of engineering and management solutions in all industries. This aims to help the manufacturing and service industries to improve productivity, develop long-term business goals, execute and lead new techno-commercial methods and principles; and ultimately help in the creation of wealth.

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A note to readers

The views expressed in articles are the authors' and not necessarily those of Industrial Vision. Authors may have consulting or other business relationships with the companies they discuss.

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ABOUT US

Society of Industrial Engineering Students - Nepal is a student-driven dynamic society dedicated solely to the support of the Industrial Engineering scholars, to bring meaningful collaborations with the industrial stakeholders, professions and individuals involved with improving quality, productivity, technology, industrial success and prosperity, thereby making a fundamental contribution to the creation of wealth. We incubate leadership, explore collaborative possibilities, and lead Innovative vision through industrial engineering discipline to be followed in mainstream of sustainable development.

HOW WE WORK?

COLLABORATION

We collaborate with industrial stakeholders, experts, and various industrious professionals to bring significant programs, discussions, seminars and many more events of great deal of education, development and economic importance.

FORUM

We are organized to support the scholars in the industrial engineering discipline through regularly scheduled programs on fields of industrial engineering. 'Society of Industrial Engineering Students- Nepal' serves as a forum for development, networking, information sharing, idea exchange and problem solving for the industrial engineering community.

PROMOTION

We are dedicated to support the profession of industrial engineering and promote an increased awareness of the value of industrial engineers and lead the nation towards remarkable development.

INDUSTRIAL PROSPERITY

We explore momentous sources of productivity improvement information via the Internet, publications, seminars, interviews and discussions including an annual magazine - 'INDUSTRIAL VISION' to find optimal and practical solutions, which contribute to the success and prosperity of an industrial undertaking, thereby making a fundamental contribution to the creation of wealth.



SOCIETY OF INDUSTRIAL ENGINEERING STUDENTS (SOIES) NEPAL

Institute of Engineering Thapathali Campus

Thapathali, Kathmandu, Nepal

+977-9840257131

✉ mail@soiesnepal.org.np, info.soiesnepal@gmail.com

www.soiesnepal.org.np

www.soiesnepal.org.np



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औद्योगिक इन्जिनियरिङ विद्यार्थी समाज नेपाल
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President's Message

It is my immense pleasure to present INDUSTRIAL VISION 5.0, the fifth edition of annual industrial publication by Society of Industrial Engineering Students (SOIES) Nepal. I must mention the fact that successful publication and continual improvement in previous four versions had indeed escalated the expectations from the fifth edition. Incorporating the practical industrial scenario with the time-relevant technological trends and the realms of Industrial Engineering was challenging for the Team Industrial Vision. Translating the challenges into opportunities and accomplishing the task at hand with dedication and teamwork was an appreciable effort from the team. I'd like to express my gratitude for their untiring efforts and contributions in converting the visualization into a reality: INDUSTRIAL VISION 5.0

Being totally a student driven organization, the year 2017-18 has been quite engaging for us all at SOIES Nepal. From the industrial meetups and interactive sessions to Industrial Engineering centered technical skills and personality development programs, the major activities and initiatives SOIES Nepal undertook to achieve its mission during this period is worth recalling.

It has been my great experience at SOIES Nepal providing directions, planning and implementing its visions and activities which would not have been possible without the support of its members and office bearers at IOE Thapathali Campus. On the behalf of Team Industrial Vision, I would like to use this platform to express my sincere thanks to the knowledge contributors, technical supporters, our valuable sponsors and all the hands that directly and indirectly supported and encouraged SOIES Nepal in its accomplishment of INDUSTRIAL VISION 5.0. For the continuous support in my every endeavor with their dedication and professional integrity, my special gratitude goes to our Industrial Engineering graduates and my colleagues.

In the days ahead, I believe SOIES Nepal will continue its creative contributions for enhancing the realm of Industrial Engineering in Nepal from the very root; the students in this discipline and effectively channel cooperations with our supporters and industrial stakeholders for industrial empowerment in Nepal.

Yushef Shrestha

Coordinator, Industrial Vision Vol. 5.0

President, SOIES Nepal

yushef@thapathalicampus.edu.np

EDITOR'S NOTE



Ever since my enrollment in Industrial Engineering, SOIES Nepal has always been close to my heart. I have learned countless lessons with the help of previous volumes of "INDUSTRIAL VISION". I must say, this magazine has always served as a platform for all Industrial Engineers to bring their innovative ideas and vision forward.

We feel motivated, when we see success. Likewise, the success of previous volumes of "INDUSTRIAL VISION" has always been a motivation and also a benchmark to become finer. The opportunity to enrich our knowledge and take our skills to the next level was a priceless gift our previous volumes provided. This volume will surely open additional platforms for industrial engineers globally.

From energy to entrepreneurship and management, this volume covers all the major trending topics in the field of Industrial Engineering which aims at enlightening all the students, engineers, and stakeholders in today's dynamic environment of industries.

I would like to express my heartfelt gratitude to all the authors of the articles in this issue. Your time and effort is highly appreciated. The knowledge, concern and insights with our team that you have shared, has made this issue brilliant. Moreover, the Industrial Vision team is grateful to everyone involved directly or indirectly, in the publication of the magazine. Your continuous support is what helps us to grow.

At last, nothing is 100% perfect. Likewise, there might be some sort of errors in our magazine as well. So I would like to apologize for inconvenience if any.

This volume is dedicated to all of you.

Enjoy!!!

A handwritten signature in black ink, appearing to read "Nitesh".

Nitesh Kumar Barnawal

Editor in Chief



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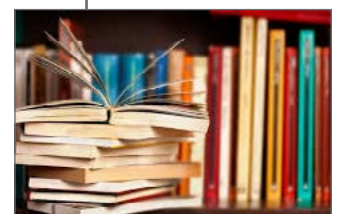
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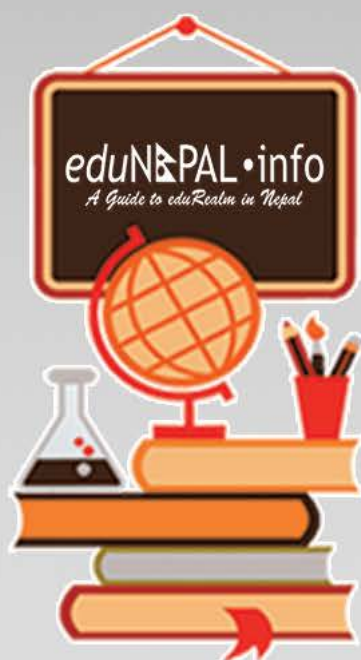
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5G

The technological breakthrough that Industrial Internet was waiting for !



Er. Riti Newa
Industrial Engineer
Graduate Researcher at
Datalytics Pvt. Ltd.
ritinewa@gmail.com



Now the IIoT players in the market require more mobility, reliability and less latency in their used networks. This could all be achieved by the 5G technology.

Industry 4.0 had been the sensational propaganda for the introduction of digitized and automated manufacturing and logistics systems currently revolutionizing the industrial scenario. The unsung heroes for making the "smart factory" a reality were the sensor market and the effective conglomeration of industrial technologies with the field of electronics.

While the alliance of the electronics and the industries has proven to be optimistically rewarding, a more powerful allegiance is on its way: that of the telecommunications, electronics and the industrial technology. With advancement in telecommunications, the advent of faster cellular networks and growth towards Next Gen 5G has now opened the pathway for Industrial Internet of Things (IIoT) and the Industrial Internet.

What is 5G?

The frontrunner in cellular network at present is the 4G, the fourth generation of broadband cellular network

that has surpassed the 3G data technology with five times the higher data speed and lower latency. The consumers are experiencing the data speed rates and connectivity like never before with 4G. The 5G technology, however, is expected to overrule all its previous generations with promises of ten times the higher speed rates and relatively lower latency period than 4G. With multinational telecommunications conglomerates like Samsung, AT&T, Verizon and even Google researching and working on 5G internets, this next generation technology seems to be attracting just the right crowds.

What is to be expected of 5G?

The major difference in the consumer end will be the perception of infinite capacity as the 5G will have ten times the speed of 4G. The consumers are still getting used to the 4G connectivity and speeds such that of 5G network will probably increase the customer markets. The 5G is expected to have delay

time of less than 1ms and 10gbps speed which will attribute to elevated customer satisfaction and could reverse the trend of dominance of Wi-Fi in data consumptions of smartphones. With Vodafone's investment in the increased mobile connectivity and cellular network increasing the growth of company by 10% in 2017, the 5G technology dedicated to enhanced cellular service will undoubtedly bring over a fresh wave of growth for the mobile industries.

What will be new?

Until now, the cellular technology has focused on enhanced customer services and advancement in networking capacity and speed. However, the 5G technology is garnering a lot more potential. As opposed to previous networks, 5G is supposed to be "green and soft" meaning that 5G will have a virtualized network infrastructure like cloud computing networks. This is supposed to aid the IIoT landscape and 5G network will probably be the main brains behind the Industry Internet and industrial digital transformation. ZTE, Chinese telecommunications technology provider has launched a 5G end to end cloud based network slicing

that is designed to allow allocation of a physical network over virtualized network slices. This being said, 5G are expected to be not only faster but a lot smarter defiantly exhibiting the cloud computing characteristics with the Software- Defined Networking. The 5G network will be more versatile and energy smart and IIoT firms will pretty soon be vying for the private and secured 5G spectrums.

Will 5G be the loyal networking technology for IIoT?

The Industry Internet will be about the automation and automation is actually a subset of wireless communication for constant data gathering and analysis for implementation of controlled processes. The smart manufacturing and control, plus the logistics and transport tracking heavily rely on the wireless access technologies. The smart home automations, applications of smart sensors in agile manufacturing lines at present are broadly using the Wi-Fi for achieving the automation and control. But the 5G network could likely change the scenario but not in the way conventionally predict. With growing use of cloud computing, the major problem for the network companies as per CEO of Juniper is "the problem of hybrid cloud connectivity, hybrid cloud management and hybrid cloud complexity". Until now, the cloud computing and big data analytics for IIoT have been sustained by Wi-Fi and more recently with 4G LTE. However, now the IIoT players in the market require more mobility, reliability and less latency in their used networks. This could all be achieved by the 5G technology but it will have a tough competition with the already in use access and communication technologies.

5G vs. Wi-Fi for IIoT

The interoperability of the 4G with Wi-Fi is a rising debate in the telecommunication industry, and with the 5G network, this might take an even more interesting turn. The 4G has been unable to outperform Wi-Fi in cloud computing and big data but with 5G this might change. 5G will have high speeds and connectivity owing to the millimeter wave technology such that it might resemble the Wi-Fi networks. With the mmwave technology, the 5G will likely have an access to a wide spectrum resulting in large broadband deployment. The 5G can improve the use

a false debate as it will be difficult to achieve the capacity that Wi-Fi has owing to the unlicensed spectrum. The 5G could still attain superiority in security over the Wi-Fi but with the emergence of carrier- grade Wi-Fi the 5G technology is expected to work side by side with the Wi-Fi in expanding the network accessibility and connectivity and capacitating IIoT firms.

Spectrum Interference and Privacy issues

IIoT firms heavily rely on the speed and connectivity to maximize their sensor and battery life. Owing to the speed and connectivity

concerns. This can pose a certain challenge to the 5G technology as the IIoT firms will have the expectations of a secure and least interfered spectrum. However, 5G firms that are currently under progress have not a strategic agenda yet for the 5G deployment. Hence the deployment of the 5G will be the major concern as this will perceptibly affect the quality of service.

Google has been researching in the 5G networks and has recently raised the issue in the existing model of spectrum licensing. As per wireless architect at Google, Preston Marshall, the current spectrum model does not allow the new players to enter the market. The raising concern of IIoT firms and Google can be indicative of the need of a shared use of the spectrum models in a more optimized deployment of 5G technology. The wheels for the 5G technology is already up and running with the global debut at winter Olympics of 2018 by the KT Corporation, South Korea's largest Telecommunication Company. With the real-time testing and accessibility of 5G experiences, the 5G technology is now a close

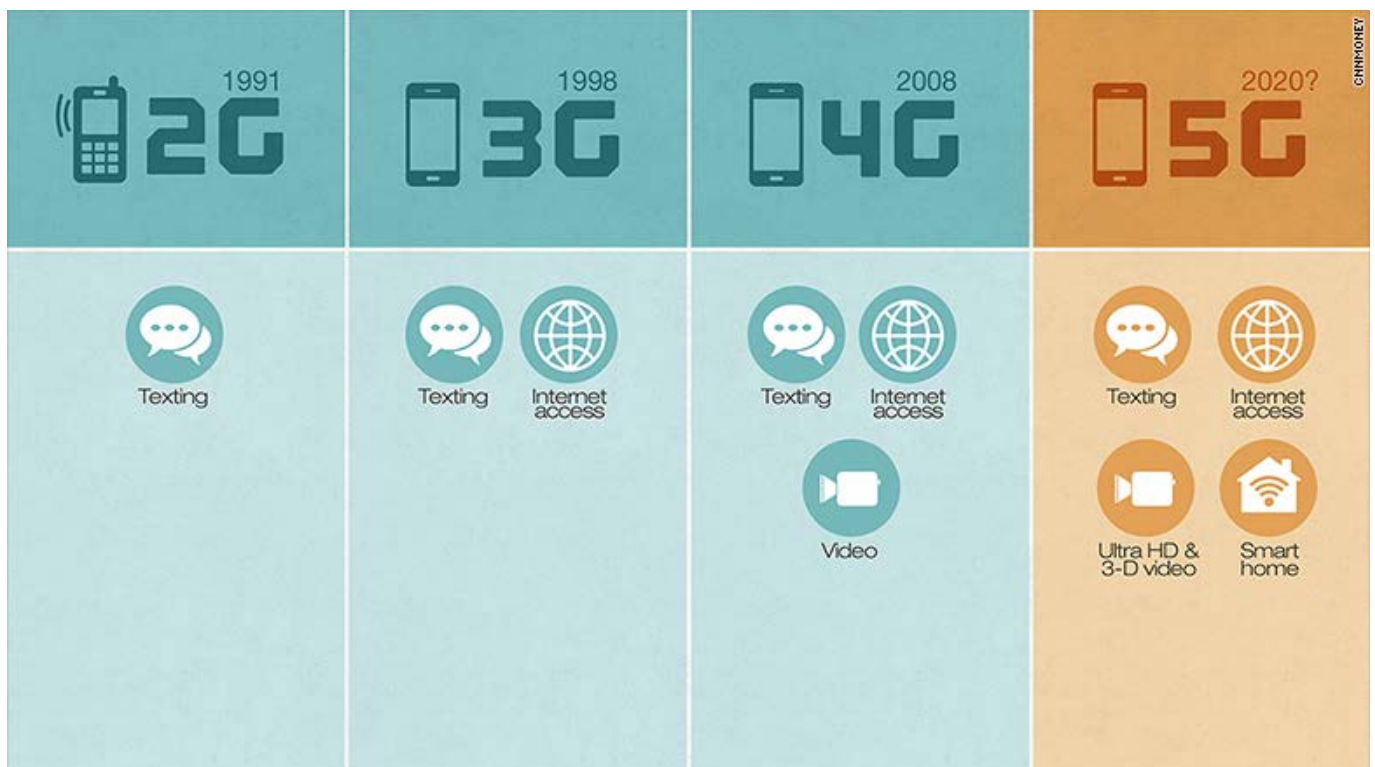
reality. The Next Gen 5G technologies is expected to help the cellular networks achieve not only higher speeds and connectivity but also become smarter. Aiding the Internet of Things, the 5G will inadvertently penetrate the telecommunications market and assume dominance over the Industry Internet. The next generation 5G technology will readily bring optimistic changes to the IIoT and accelerate the growth of Industrial Internets. A revolution is about to occur in the industries and 5G will undeniably be a big part of it.



of cellular networks over Wi-Fi for the mobile companies.

However, the 5G replacing Wi-Fi in IIoT would still be

proven that could be attributed to 5G technology, the IIoT firms are bound to expect a premium service to meet their technical



ARTIFICIAL INTELLIGENCE: COMPUTER BEINGS!

AI impacts our lives effectually. A look into how industrial leaders should think of this.

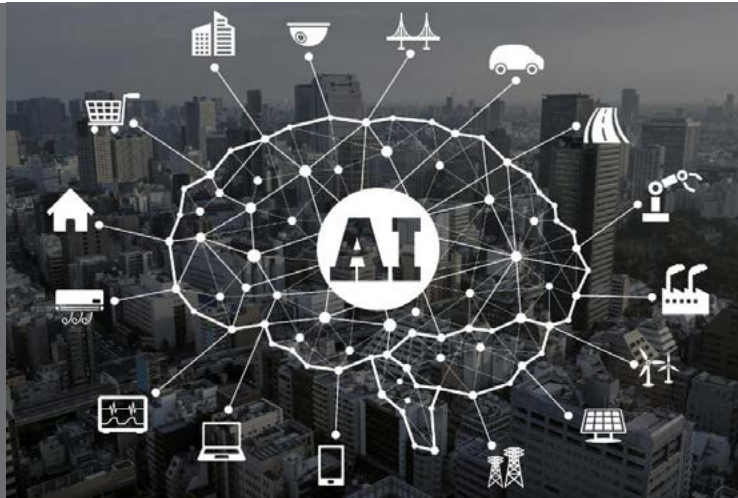


Ranjita Bastola

B.V.Sc. & A.H. 8th semester
Agriculture and Forestry University
Rampur, Chitwan, Nepal
bastolaranjita01@gmail.com

Image Source: <http://www.biztechclub.com/tech-talk/the-tech-titan-ai-debate>

There is no doubt that Artificial Intelligence is one of the most sophisticated of all the emerging technologies. Artificial Intelligence deals with the understanding of machines and programming them to do tasks autonomously as well as helping them get smarter. It requires a great deal of understanding and problem-solving.



Artificial Intelligence (AI) is the simulation of human intelligence processes by digital systems, especially computers. These processes include learning, reasoning and self-awareness.

This is the best era to be alive, the 21st century and technology at its epitome. The paradigm of technology now offers us computer beings. Human beings unique with their intellectual characteristics are now endowing the same characters into machines. Thus, the pragmatic concept of artificial intelligence is flourishing inside the mind of scientists and all the attention is drawn towards its possibility.

Natural Intelligence i.e. human brain has brought the evolution and civilization this far, now we are thinking of developing exact intelligence into machines. Intelligence is the cognitive ability to carry out any task from the

simplest to the most complex: brain-based skills; the set of mental processing like learning, perception, reasoning, ability to understand, taking decisions, motor skills, visual & spatial processing, executive functions, problem solving, emotional self-regulation, inhibition, anticipation, caring. Other way, intelligence is intellectual process portrayed by human beings such as the ability to reason, discover meaning, generalize or learn from the past experience and make decisions at that fraction of time.

AI was coined by John McCarthy, as American computer scientist, in 1956 at The Dartmouth Conference. However, the evolution of

artificial intelligence began with the theoretical work on it put forth by Alan Mathison Turing; British Logician and computer pioneer in 1935. His ideas are based upon connectionism which means the understanding the neuronal functions and executing such patterns into machines by creating networks of neurons to perform all the cognitive tasks as brain does. Apple's SIRI, self-driving car, IBM Watson supercomputer, Robotic process automation, Natural Language Processing are popular examples of AI. In fact, AI comprehends anything from Google's search algorithms to IBM Watson supercomputers to Google babies to autonomous weapons unlike the robots presented on science fictional movies. Artificial Intelligence is broadly classified into two categories:

1. Weak AI or Narrow AI

It is the system programmed for a particular task. Virtual personal assistants- SIRI, only facial recognition or only internet search or only driving car are some examples of narrow AI. The software used in business to analyze data and synchronize the finance is included under weak AI.

2. General AI or Strong AI

It is the system programmed with the cognitive ability as human beings so that when it is exposed to an unfamiliar task, it is intelligent enough to find the solution.

The AI existing at present is Narrow AI system, which can out-perform humans only at particular task but the strong AI, which might be developed in near future, has capability to out-perform humans in every task; according to scientists. The implication of AI has remained supportive and beneficial to human beings till date in enterprise, business, health, education and lifestyle till date.



Fig: 'Eve' the Robot scientist

1. The latest news of invention of Robot Sophia by Hanson Robotics Ltd. by using artificial intelligence is hot news. Sophia is processed with remarkable expressiveness, aesthetics, and interactivity. Sophia was granted the citizenship by Saudi Arabia with rights ahead of real women and foreign workers.

2. The news published in Science Daily on 18th January 2018 says, "An ingredient commonly found in toothpaste could be employed as an



Fig: Sophia speaking at the AI for GOOD Global Summit, International Telecommunication Union, Geneva in June 2017

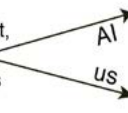
anti-malarial drug against strains of malaria parasite that have grown resistant to one of the currently-used drugs. This discovery, led by researchers at the University of Cambridge, was aided by Eve, an artificially-intelligent 'robot scientist'."

The technology had made this world smaller and easier with its own complications. The rise of artificial intelligence is a controversial subject among scientists, researchers and public. It owns both the potential to prosper human civilization and destroy it. Stephan Hawking has alarmed the human race about threats of AI while some other scientists think AI system would only be appropriate to human beings if the goal of AI is aligned with goal of humankind.

This creates some kind of quenches in our head regarding the existence of AI. To clear the arising misconceptions about humanity and AI, the following picture might be helpful: Every progress in technology come with pros and cons, this time humanity and future existence of human race is added. Human being is always intelligent enough to make rational decisions whether to bring computer beings in near future or not!

References:

- <https://futureoflife.org/background/benefits-risks-of-artificial-intelligence/>
- [https://en.wikipedia.org/wiki/Sophia_\(robot\)](https://en.wikipedia.org/wiki/Sophia_(robot))
- <http://searchcio.techtarget.com/definition/AI>
- www.mirror.co.uk/science/robot-scientist-finds-toothpaste-ingredient-11871670
(Retrieved on February 25)

Myth: Superintelligence by 2100 is inevitable Myth: Superintelligence by 2100 is impossible		Fact: It may happen in decades, centuries or never: AI experts disagree & we simply don't know	
Myth: Only Luddites worry about AI		Fact: Many top AI researchers are concerned	
Mythical worry: AI turning evil Mythical worry: AI turning conscious		Actual worry: AI turning competent, with goals misaligned with ours	
Myth: Robots are the main concern		Fact: Misaligned intelligence is the main concern: it needs no body, only an internet connection	
Myth: AI can't control humans		Fact: Intelligence enables control: we control tigers by being smarter	
Myth: Machines can't have goals		Fact: A heat-seeking missile has a goal	
Mythical worry: Superintelligence is just years away		Actual worry: It's at least decades away, but it may take that long to make it safe	



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HOW TO IMPRESS IN AN INTERVIEW

with 10 easy tips



Preparation

Do as much research on both the company and the role before you enter the interview, once you're fully prepared, you have nothing to worry about!



Smart Dress

If you're the best person for the job, prove it and dress your best. Wear a full suit with a tie and smart shoes.



Be Early

If you turn up on time, great. If you turn up earlier than your set interview time, it shows the interviewer that you're super keen for the role.



Phone Off

Before you enter the interview, make sure your phone is switched off. It's looks really unprofessional if you get a text or phone call during.



Firm Handshake

A firm handshake shows that you're both confident and capable, but don't overdo it, the last thing you want to do it cause your interviewer an injury!



Smile

As soon as you meet your interviewer, give them a warm smile and give full eye contact. This way you'll make them feel comfortable with you.



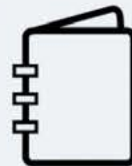
Body Language

Body language is essential during an interview. Sit up straight, nod whilst they're talking and always keep eye contact. As soon as the interviewer recognises you aren't interested, it's difficult to win them back over.



Write Notes

During the interview, write plenty of notes that you think might be useful. This also shows the interviewer that you're fully focused on what they're saying.



Curriculum Vitae

Make sure your CV is up to date firstly, but also take a copy for yourself and the interviewer. Carry it in a professional looking case or cover, it shows pride in your work so far!



Ask Questions

It's essential that you ask questions at the end of the interview. Have at least 5 prepared, and any others that pop into your head at the end are also fine. Always keep the interviewer talking, the more questions you ask, the better it reflects on you.

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Entrepreneur is the one who sees the bigger picture by creating opportunities not just for him/her but more importantly for others. The harder this problem becomes, the better the opportunity for someone who can solve it.

Entrepreneurship is finding opportunity in a problem. Problems can come in various flavors – the product – too expensive, scarce, difficult to use, slow etc. An Entrepreneur is the one who sees the bigger picture by creating opportunities not just for him/her but more importantly for others.

The harder this problem becomes, the better the opportunity for someone who can solve it. If you are an engineer, know how to create a device that can generate wind power then, you can manufacture and sell that for cheap, this is a great opportunity here. Not many people can create this device, and once you are in customers' homes, you can continue providing superior service and build a great business. The larger the problem, the bigger the opportunity.

A problem may only be for one person, or for many. If it is for one person, it – a one-time service and not a business opportunity. But if many people have the same

problem, then it is a big entrepreneurial opportunity. For example, we all eat and want good quality food for cheap. However, we have food quality problems in Kathmandu now. This is a great business with a huge market as everyone hates having to buy impure and expensive food. If you can solve Kathmandu's food problems with your business, you could be a billionaire. Plus, you would give service to millions and be thanked for the service you give.

Let us take examples of some famous entrepreneurs who have looked at a problem as an opportunity, built great businesses and changed the world and our lives.

In the 1970s, people did not have computers in their homes like we do today. You had to go to a large mainframe computer center and make a request to have your work be done. There may have been one or a few large mainframes in our region and your task may have taken a long time. Businesses such as cheap

international calling, which depend on fast and cheap computers, were not around. It was hard and very expensive to make an international call. If your family member went overseas, you may have only spoken once every few months. Today, we are in a connected society in which we use Skype, Facebook and other technologies to stay connected in real-time.

Entrepreneurs looked at this big problem of expensive and difficult computation and connectivity, built products to solve this problem and changed the world. Bill Gates, Steve Jobs, Andy Grove, Mark Zuckerberg, Janus Friis, Niklas Zennstrom and many other entrepreneurs looked at our connectivity and computing challenges and built great businesses to solve them.

In Nepal, Min Bahadur Gurung of Bhatbhateni has changed the way we shop through his chain of supermarkets. He has redefined success as how you can scale from a mom-pop grocery store to a chain of Supermarkets in Nepal. He has moved us from an age in which we went to different shops to buy different things in Asan, to finding most under one roof, from a culture of bargaining to a culture of fixed low prices, from daylong affair to hour-long time-efficient shopping

while streamlining the supply chain. Or take Karna Shakya who made Thamel what it is now. He opened a small motel in a quiet residential neighborhood years ago and invited other businesses around it to flourish around it. Thereby he helped create the ecosystem that now stands as a must-see neighborhood in Kathmandu that we call, "Thamel". Entrepreneurs build eco-systems, platforms, not just their business.

Talking about Entrepreneurship moreover in the context of Nepal, this is even more important as we have a high number of unemployed Nepalese and dignified opportunities are limited to a privileged few. **There is an ongoing joke in Nepal, that if we produce a politician, we destroy 100 jobs. But if we create an entrepreneur, we create 100 jobs.** On a serious note, this is why many youths should turn to entrepreneurship as the engine of their personal, professional and soulful growth. We need not look far to realize how entrepreneurship has transformed our neighbors, China and India. A responsible government at this time in Nepal, would bet on producing and helping more entrepreneurs than on anything else.

Here are few ways how Entrepreneurs will transform Nepal:

Solving problems in Nepal

We hear of so many problems in Nepal. Listen to news, and you will hear problems left and right. Entrepreneurs view these problems as opportunities and solve problems for all of us to have a better life in Nepal. In the process of solving problems, they create jobs and positivism and efficiency in the economy. Today, many have become dependent on foreign aid and the government to solve our problems. Entrepreneurs don't wait and will not wait for others to solve problems.

They grab the opportunity, try to solve it and find a sustainable way to do this (business). Imagine a future in which each Nepali is hungry for problems and jumps to solve every problem in our society and makes a business out of it. We could become a very different and prosperous society.

Creating jobs that benefit low-income families in Nepal

As an entrepreneur, you may help a struggling Nepali family directly, lifting them from poverty simply by creating 'jobs'. The employment you generate and the salary you pay helps towards improving the local economy, i.e. small shops, farmers, schools, groceries and local towns. You help the local eco-system by the wealth you generate for others. This, in turn, helps generate a positive cycle of employment. You help continue this positive cycle of growth even as a small entrepreneur.

Creating platforms/ ecosystems in Nepal

As an entrepreneur, you will be creating not just one small business but over the course of time building it into a platform, an eco-system so that others can build their own businesses around yours. Thamel became Thamel only when businesses started to bloom, servicing around one Hotel, Kathmandu Guesthouse. So you will be helping create opportunities for others too, by creating this as a by-product of building their ventures. As a result of an entrepreneur, an industry of like-minded entrepreneurs came into being. Do not under-estimate the power of entrepreneurship to change the world.

Raising dignity of Nepalese

When we get the opportunity to work in our own country, utilizing materials and human power here and export them, not having to leave our place to work in faraway lands, it makes us dignified. It raises our family's self-esteem, our children's self-esteem. Entrepreneurs create dignified jobs and dignified professionals as their

employees. Entrepreneurship is not about exploiting people. It is about empowering people so that they help run their business better. Hari Bhakta Sharma has scaled his pharmaceuticals company – Deurali Janata – by successfully providing dignified employment and opportunity to work in a place which makes life-saving medicines at affordable prices for the poor.

Removing the gap between rich and poor in Nepal

A strange statement? Well, many confuse entrepreneurs with traditional traders, monopolistic business houses or even evil rich people. Till now in Nepal, the power and wealth have been restricted to a few traditional elites. They earn their wealth, not by competing fairly but rather by abusing their power, access, status and restricting other Nepalese wishes to become an entrepreneur. They stifle innovation, growth and encourage practices that benefit just themselves. So they are not entrepreneurs. In fact, when entrepreneurs come into the equation, they in-fact break monopolies and barriers created by these traditional power elites. The fact that entrepreneurs can come from any background, ethnic groups, age, status is a powerful way to transform society from status-quo to progress.

For economic equality and prosperity in Nepal, we need not more politicians or job seekers but more entrepreneurs who rise from obscurity, cutting across ethnic groups, economic past, castes, and age. In other words, that entrepreneur could be you. If we are looking for the profound changes we want to see here, help yourself become an Entrepreneur. Take the example of Rudra Pandey, the founder of D2Hawkeye. He comes from a simple humble background in remote Nepal, rose through sheer hard work and ambition, started and grew D2Hawkeye into a powerhouse. He grew the firm to a global healthcare analytics firm and helped put Nepal on the map of world-class companies. Many Nepalese have taken inspiration

from him and are trying entrepreneurship in Nepal and outside in their own ways.

Creating positive cultures
"Yes we can"- This is the feeling that prosperity brought by Entrepreneurship evokes. It improves the self-confidence of all Nepalese. With this positive attitude, it helps replace the current "blame-game" culture of "yestai ho", "kegarne" attitude in which we are stuck and can no longer create a win-win situation in villages and towns across Nepal. It helps usher us towards a fair meritocratic culture in which every Nepali, irrespective of background, gains the attitude – 'yes, I can meet my dreams.'

Positive culture in Nepal is essential if we want to create an economically equal, fair, accountable, responsible society. And as an entrepreneur, you will be helping us make this faster than any other professional. Prithvi Bahadur Pande, the current chairman of Nepal Investment Bank, was responsible for creating a positive culture trend in the Banking sector. Many of the current heads of Financial institutions in Nepal have worked with him and followed his lead to be successful bankers themselves.

So how will You benefit as an entrepreneur in Nepal?

1) A dignified status

Nepal has changed. Now your peers, your followers, and many Nepalese will regard an entrepreneur as a leader. And some will even think of you as a visionary. They will read about you, hear about you and follow your steps. You will be inspiring the next generation of Nepalese to become creative entrepreneurs and help create great entrepreneurial centers right here in Nepal like the Silicon Valley in the United States. Entrepreneurs like Anil Chitrakar, Karna Shakya, Ambika Shrestha, Min Bahadur Gurung are respected, admired and thanked for the opportunities they have created in Nepal.

2) A comfortable life

In Nepal, an entrepreneur's life is much more comfortable as your ability to succeed is higher because there is less competition here. Once you are successful, you carry great leverage. As an entrepreneur, you can leverage your success to have access to more opportunities to work on a bigger level, may it be with the government or on bigger lucrative projects.

3) A satisfying life

The satisfaction of having helped many will be extremely gratifying for your soul. In Nepal, you can actually see your effects directly. Leading an honest life as an entrepreneur and providing for others – what a satisfying way to live here than in the already developed country where your impact may be minimal compared to here. How best to help others – by innovating a fishing industry, not just teaching how to fish, or worse just giving them fish.

4) Live your life

As an entrepreneur, you can live your life passionately, not your parent's life, or your friend's or your spouse's, but yours. I believe this is one of the best ways to live where you decide on your path. In other words, you lead a passionate life. As an entrepreneur, I have enough time and energy to follow my different passions in life, to experiment on projects and to mentor others. It allows me to make time for myself and my family while finding ways to serve the society better.

Entrepreneurs see opportunity in a problem. So I hope that each of us who wants to be an entrepreneur aligns our antennas and see an opportunity in the problems that we hear every day in our lives.



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Sanjen(Upper) Hydroelectric Project

Location :	Chilime V.D.C of Rasuwa District
Project Type:	Peaking ROR
Installed Capacity:	14.8 MW
Annual Energy Generation:	85.87 GWh
Design Flow:	11.07 m ³ /s
Head Gross:	161.30m
Peaking Pondage Gross Storage Capacity:	40,000 m ³
Headrace Tunnel:	1378.00m
Surge Tank:	40.00m(h), 6m(dia)
Penstock:	478m(l), 1.1~2.5m(dia)
Turbine:	Francis, Horizontal Axis 3 nos
Powerhouse:	Surface Type
Transmission Line:	132kV, 5km

Sanjen Hydroelectric Project

Location :	Chilime V.D.C of Rasuwa District
Project Type:	Cascade ROR
Installed Capacity:	42.5 MW
Annual Energy Generation:	251.94 GWh
Design Flow:	11.07 m ³ /s
Head Gross:	442.0m
Headrace Tunnel:	13630.00m
Surge Tank:	51.00m(h), 5.5~5.8(dia)
Penstock:	1020m(l), 1.06~2.5m(dia)
Turbine:	Pelton, Vertical Axis 3 nos
Powerhouse:	Surface Type
Transmission Line:	132kV, 1.5 km

Phone No.: 977-01-4374275
Web: www.sjcl.com.np
email: sanjenhcl@gmail.com
P.O.Box: 12667

AUTONOMOUS MAINTENANCE: A CULTURAL CHANGE

Review, Retain, Retrieve



Er. Shuveksha Sapkota
Industrial Engineer
Lecturer, Hillside College Of
Engineering
suvu2071@gmail.com

ELSE Inc.



Autonomous maintenance thus motivates people and ensures the better working of equipment as it is targeted to react in a quicker manner in case of a failure.

Talking about the essence of world-class maintenance, performing something in an accelerated manner is referred as autonomous maintenance. Autonomous Maintenance is the paradigm shift in the attitude of performing maintenance activities and is a most vital pillar of Total Productive Maintenance also called Jishu Hozen targeted to maximize production system effectiveness. Since the effectiveness of maintenance program directly affects the productivity and efficiency of a certain firm, autonomous maintenance targets in reestablishing and avoiding of quick deterioration involving step by step secured improvement process. This improvement process has a major positive effect for JIT (just in time) maintenance giving best practices and maintaining operational standards. The standardization is only possible when autonomous maintenance tasks are carried out effectively. Consequently, those autonomous

maintenance tasks are supposed to be executed by operators and not dedicated maintenance technicians inside a workplace. Using autonomous maintenance, operators feel ownership of equipment and can bring out redundant maintenance tasks along with fruitful results in a direct manner for preventing breakdowns. There are seven basic steps of performing autonomous maintenance which is described below:

(a) Clean and Inspect

This step is analogous to the "shine" component of 5S that involves initially organizing workplace and starting cleaning activities of equipment. Cleaning activities reveal defects like cracks, poor lubrication, or other malfunctioning parts of equipment and are important because debris in mechanical, hydraulic, or electrical systems can lead to loss of precision in equipment. This step incorporates the teams of production, maintenance and engineering staff inside

a workplace where the tasks done by shutting down and locking off the equipment and then performing an in-depth cleaning and inspection, looking for any signs of deterioration.

(b) Eliminating contamination sources and inaccessible areas

This step aims to wipe out sources of contamination and inaccessible areas as once equipment has been fully restored, implementing countermeasures to control the further sources of debris, dirt or grime can be difficult. So, this is done by overhauling leaky pipe joints, placing shields where necessary which finally prevents spattering and improves accessibility for cleaning. This also means making adequate repairs and modifications to phase out problems which keeps the equipment functioning properly and ensures easy inspection after renovation.

(c) Develop standards for cleaning and lubrication

The step three directs to establish provisional cleaning, inspection and lubrication standards which is a visible evidence. This entails first cleaning and inspecting whether standards are met and then specifying the

optimum use of lubricant, listing and diagramming all lubrication inlets on each machine which boosts the lubrication system in centrally lubricated equipment. The route from the pump to main pipes, branch valves, branch pipes, and lubrication points is developed by tracking and measuring amount to be needed and finally applying proper disposal procedures for safety. Thus the autonomous maintenance teams should follow the lubrication and inspection schedule to be sustained dependably with minimum time and effort along with noting problems with accessibility and lubrication flow.

(d) Conduct General Inspections

This step is conducted by training the operators for inspection procedures using inspection manuals, enabling them to expose and then correct the equipment defects and abnormalities by performing comprehensive equipment analysis. The main objective is to increase the skill of operators to become better at identifying abnormalities so that the number of breakdowns will decrease. So, operators must first receive training in equipment subsystems in order to do this effectively. The maintenance team inside the firm feels decreased workload from steps one through three. So, this freed-up time should then be used to develop operator training materials and visual aids, such as instruction sheets / standard work charts, diagrams, models, or any other training aids for lubrication, electrical circuits, fire prevention, drive systems, hydraulics etc.

(e) Carry Autonomous Inspection

This step is aimed at maintaining autonomous maintenance standards and is very similar to what needs to be done with the “standardize” step of 5S principle. Definitive autonomous standards are formulated which is to be followed effectively and efficiently firstly by reviewing documentation for cleanliness, inspection, and lubrication. Next process is followed by consulting with the maintenance department for drawing up autonomous maintenance check sheets and then bringing it in use by carrying out inspections. Assessment can be done by use of visual controls and charts for job assignments that will be more effectual.

(f) Standardization Through Visual workplace Management

This step aims at providing quality assurance and developing overall housekeeping systems focusing on the relationship between equipment

conditions and the quality of the product being produced for standardization. Engineering department, maintenance teams, and operators must work collectively for this step to be successful. Mostly operators need to learn how to maintain cleaning, lubrication and inspection standards at first followed by work area material flow standards and then data recording method standards. If product defects appeared affecting equipment performance while through the process, mistake proofing can be done which identifies opportunities and applies controls to prevent errors. Lastly, the workplace is then visualized by tools and supplies management standards.

(g) Continuous improvement and Autonomous management

The final step of autonomous supervision is analogous to the “sustain” step of 5S. The firm's policy and objectives are rolled out and implemented and regular

auditing and improvement activities need to be done to ensure that standards are followed. Reward systems can be applied to re-enforce the discipline. Autonomous management thus illustrates the dual aspect of autonomous maintenance; restoring equipment and also developing cooperation between people and ensuring teamwork.



Autonomous maintenance thus motivates people and ensures the better working of equipment as it is targeted to react in a quicker manner in case of a failure. Whenever a failure occurs, most of the companies in the world apply for preventive maintenance program but introducing this maintenance program saves both time

and money. Because while performing maintenance activities, we are unaware of the time losses and losses in overhauling, repair and maintenance costs that could have made a big difference in the performance rate, quality rate, and productivity factor. Moreover, the overall breakdown time decreases at a subsequent rate. Overall Equipment Effectiveness increases as equipment individual performance is upgraded inside the firm by introducing this maintenance scheme. So finally it can be concluded that autonomous maintenance is ensured by secured improving process in equipment pursued by well skilled human resources and then finally improving the corporate culture due to which achievement of zero breakdown and zero defects is possible. Then only the conventional philosophy of operators of “I run it, you fix it,” or “I’m manufacturing, you’re maintenance” changes to “I run it and I must fix it” by introducing this autonomous maintenance.

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'TIME' - THE 4TH DIMENSION



Animesh Timsina
Student of Computer Engineering,
IOE Pulchowk Campus
antim.timsina7777@gmail.com



It is palpable that one day we will be able to achieve this astounding peak of discovery and manipulate 4th dimension-time and control all the time frames: past, present and future. It is that day when we will be successful in formulating the one unified theory- the theory of everything and be the masters of this universe aka GOD.

What is the 4th dimension?

Think of all the possible paths that can be travelled by a body for experiencing any change. It can move sideways (along x-axis, front and back (along y axis) and up-down (along z-axis). This correspond the 3 dimensions of space. But what if I tell you there is a 4th dimension along which every body in this universe is constantly traveling through. Any guesses! You guessed it right, It's 'TIME' (better call it duration). To understand this, we need to have a general understanding of time and its relationship with space and for this we need to understand 'LIGHT'. These tiny packets of energy are something much greater than we think. In physics, space-time is any mathematical model that fuses the three dimensions of space and the one dimension of time into a single four-dimensional continuum.

Why speed of light is constant regardless of source and observer's velocities?

Imagine a car traveling at a speed of 80% of light speed with respect to observer on the ground and towards it (from the north to the south). Light reflected from the car reaching our eye allows us to view the car. Also consider a horse cart traveling from the west to east at a certain speed towards a junction where it is about to collide with the car. We are acquainted with relative velocity principle of Sir Isaac Newton.

According to this principle, light from the car travels at a speed of $(c+0.8c)$ relative to the observer. But the light from the horse cart is traveling at a lower speed than $(c+0.8c)$. They collide at a certain moment at the junction. But due to varying speed of light reaching the observer's eye, we see the car reach the junction first and collide with an invisible object since horse cart hasn't reached the junction yet according to the observer's eye. But this doesn't happen in reality. Do you know why this doesn't

happen despite of Newton's relative velocity principle? This is because c is constant regardless of the velocity of source or observer. No matter how fast the source moves or the observer moves, for them speed of light is constant which is 3×10^8 m/s. This means light from car and horse cart travel at same speed 3×10^8 m/s which allows us to view the collision perfectly. This property of light is really significant for we beings to understand this universe.

What has speed got to do with 'Time'?

Now comes the horrifying part. Imagine a train moving at a high speed with 2 mirrors at up-down position and light beam bouncing between them. For a man inside the train, he views the light beam bounce up-down but for an observer outside the train he views the light beam move up-down as well as horizontally because train is moving horizontally. This means for 2 strikes of light beam in the mirrors, total distance covered by light beam with respect to the man in the train is less with respect to the observer outside the train. However we know that light's speed is constant. We also know that (Speed=distance covered/

time taken). Since speed is constant, this means that time taken between two successive collisions of light beam is more for the observer outside the train as compared to the man inside the train. This means that if the man inside a train is wearing a wristwatch then for an outside observer, the movement of the hands of the clock of the man in the train is rather slow as compared to the movement of the hands of his own clock. Every events happening inside the train seem to take much more time including the heartbeat of the man inside the train, blood flow rate, thoughts and so on. This effect is called Time dilation. This means time passes slowly inside the train than in outside world. Imagine the speed of train is much higher than we had imagined last time. Let it rise to around 90% of light's speed. For such high speeds, effect of time dilation is horrifying. Let the train move at such high speed for at least 10 years. When the train stops and man steps out, he will be unable to recognize his friend since his friend will have aged more than him. This effect is true for every mass in this universe and it has been tested multiple times by the physicists with success on every tests. This concludes the fact that time is relative.

Does gravity affect time?

There is one more fascinating thing about time. Not only speed, but gravity affects time as well. It is found that time dilation is more prominent on huge gravitational fields. Do you know that clocks on the satellites need to be calibrated frequently to match with the clocks of the earth???

To make GPS work accurately, effect of time dilation needs to be taken into account.

What has GPS got to do with Relativity?

Because an observer on the ground sees the satellites in motion relative to them, Special Relativity predicts that we should see their clocks ticking more slowly. Special Relativity predicts that the on-board atomic clocks on the satellites should fall behind clocks on the ground by about 7 microseconds per day because of the slower ticking rate due to the time dilation effect of their relative motion. Further, the satellites are in orbits high above the Earth, where the curvature of space-time due to the Earth's mass is less than it is at the Earth's surface. A prediction of General Relativity is that clocks closer to a massive object will seem to tick more slowly than those located further away. As such, when viewed from the surface of the Earth, the clocks on the satellites appear to be ticking faster than identical clocks on the ground. A calculation using General Relativity predicts that the clocks in each GPS satellite should get ahead of ground-based clocks by 45 microseconds per day. The combination of these two relativistic effects means that the clocks on-board each satellite should tick faster than identical clocks on the ground by about 38 microseconds per day ($45 - 7 = 38$)! This sounds small, but for high-precision of the GPS system requires nanosecond accuracy. If these effects were not properly taken into account, a navigational fix based on the GPS constellation would be false after only 2 minutes, and errors in global positions would continue to accumulate at a rate of about 10 kilometers each day! The whole system would be utterly worthless for navigation in a very short time.

TRAVELING TO THE PAST AND THE GRANDFATHER PARADOX:

We've established that time travel into the future happens all the time. Scientists have proven it in experiments, and the idea is a fundamental

aspect of Einstein's theory of relativity. You'll make it to the future; it's just a question of how fast the trip will be. But how about travelling to the past?

There's nothing in Einstein's theory that precludes time travel into the past, but the very premise of pushing a button and going back to yesterday violates the law of cause and effect. One event happened in our universe, and it leads to yet another in an endless one-way string of events. In every instance, the cause occurs before the effect. Just try to imagine a different reality, say, in which a murder victim dies of his or her gunshot wound before being shot. It violates reality as we know it; thus, many scientists dismiss time travel into the past as an impossibility. This violation of reality is best explained by **The Grandfather Paradox.**



The grandfather paradox is a paradox of time travel in which inconsistencies emerge through changing the past. The name comes from the paradox's common description: a person travels to the past and kills his own grandfather before the conception of his father and mother, which prevents the time traveler's existence. Despite its title, the grandfather paradox does not exclusively regard the contradiction of killing one's own grandfather to prevent one's birth. Rather, the paradox regards any action that alters the past: there is a contradiction, past become different from the way it was.

Some scientists have proposed the idea of faster-than-light travel to journey back in time. After all, if time slows as an object approaches the speed of light then might exceeding that speed cause time to flow backward? Of course, as an object nears the speed of light, its relativistic mass increases until, at the speed of light, it becomes infinite.

HIGHER DIMENSION, THE THEORY OF EVERYTHING AND GOD:

A theory of everything (ToE), final theory, ultimate theory, or master theory is a hypothetical single coherent theoretical framework of physics that fully explains and link all physical aspects of the universe. Finding a ToE is one of the major unsolved problems in physics. Over the past few centuries, two theoretical frameworks have been developed, as a whole, that closely resemble a ToE.

These two theories upon which all modern physics rests are general relativity (GR) and quantum field theory (QFT). GR is a theoretical framework that only focuses on gravity for understanding the universe in regions of both large-scale and high-mass: stars, galaxies, clusters of galaxies, etc. On the other hand, QFT is a theoretical framework that only focuses on three non-gravitational forces for understanding the universe in regions of both small scale and low mass: sub-atomic particles, atoms, molecules, etc.

Through years of research, physicists have experimentally

confirmed with tremendous accuracy, in accordance with their findings, scientists learned that GR and QFT, as they are currently formulated, are mutually incompatible –both cannot be right. Since the usual domains of applicability of GR and QFT are so different, most situations require that only one of the two theories be used. As it turns out, this incompatibility between GR and QFT is apparently only an issue in regions of extremely small-scale and high-mass, such as those that exist within a black hole or during the beginning stages of the universe (i.e., the moment immediately following the Big Bang). To resolve this conflict, a theoretical framework revealing a deeper underlying reality, unifying gravity with the other three interactions, must be discovered to harmoniously integrate the realms of GR and QFT into a seamless whole: a single theory that, in principle, is capable of describing all phenomena.

Let us image a 2D world with only left-right and forward-backward axis. There is no height or up-down axis. Also imagine that this world is inhabited by living beings like us. These beings live in a 2D world and hence they can't imagine 'height'. What happens if a man of 3rd dimension comes to visit the beings of 2D world? He can't be seen by the beings of 2 dimensions since such beings have no idea what height is. Such beings can manipulate the forward-backward and left-right positions easily but cannot manipulate up-down position. However a 3D being can easily manipulate all possible positions. In this 3D world, let's imagine a being of higher dimension (say 4D world) comes to visit us. Since he can manipulate the 4th dimension- which is Time, but we can't. He will be able to see and affect every time frame of we 3D beings (past, present and future).



INSTITUTE OF ENGINEERING:

I feel very delighted to know that SOIES Nepal is publishing the 5th volume of their annual magazine "INDUSTRIAL VISION" in collaboration with the Department of Industrial Engineering, Thapathali Campus. Best wishes to the entire team of this magazine. Keep Up the good work!

Prof. Dr. Triratna Bajracharya
Dean, Institute of Engineering
Tribhuvan University



IOE THAPATHALI CAMPUS:

I am elated to know that SOIES Nepal is publishing the 5th issue of their annual magazine "INDUSTRIAL VISION". The previous issues were a fair reflection of Nepalese Industrial Sector and I hope that this issue will be an invaluable guidance for Nepal's Industrial growth and development. Industrial Engineering being taught only in IOE Thapathali Campus have been given a high priority by students in present days and students from this faculty are showing their talents in different fields. Therefore, I would like to express thanks to all article writers, supporting organization and also want to express gratitude towards Department of Industrial Engineering for the continuous co-ordination and support to SOIES Nepal.



Er. Ishwar Chandra Baniya,
Campus Chief,
IOE, Thapathali Campus



CONFEDERATION OF NEPALESE INDUSTRIES:

I am very pleased to know that SOIES Nepal has continued the good tradition of publication of the annual magazine this year too. I would like to congratulate the entire team for publishing such a useful journal which is very instrumental for technological advancement and innovation in the industrial sector, the backbone of economy. Best Wishes from the entire team of CNI.

Mr. Hari Bhakta Sharma
President
Confederation of Nepalese Industries (CNI)



OUR WELL WISHERS !



DEPARTMENT OF INDUSTRIAL ENGINEERING:

I would like to appreciate the efforts of SOIES Nepal family and congratulate the entire team for the successful publication of the 5th volume of annual magazine "INDUSTRIAL VISION". I hope for similar innovative idea and effort from the team in the coming future too.

Er. Sudan Neupane
Head of Department
Department of Industrial Engineering
IOE Thapathali Campus



FREE STUDENTS UNION 2073, THAPATHALI CAMPUS:

I would like to extend my best wishes to the entire team of SOIES Nepal for the publication of 5th volume of annual magazine "INDUSTRIAL VISION". Also, I would like to assure that FSU Thapathali Campus will always be with you to support your academic and professional activities. All the Best.



Mr. Prajjwal Khatri
President
FSU Thapathali Campus



INDUSTRIAL ENGINEERING GRADUATE

My Greetings and Best wishes to the SOIES Nepal and magazine team for the successful publication of the 5th edition of the annual magazine "INDUSTRIAL VISION". Hope to see some more good works by the SOIES Nepal team in coming days. All the Very Best.

Er. Amrit Baniya,
MEP Engineer



समय, अम र पैसाको बचत गरौं काठमाडौं स्टील प्रयोग गरौं



नयाँ प्रविधि (MECHANICAL SPLICING)



- न्यूजिल्याण्डको Reid टेक्नोलोजिबाट निर्मित
- नटबोल्ट सिस्टम (इन्डीको कडा खपत)
- सही कॉन्क्रिट मात्रा साथै बलियोपन
- काम गर्न सजिलो तथा कडा खर्चिलो
- IS 1786 : 2008 प्रमाण चिन्ह प्राप्त नेपालको पहिलो स्टील कम्पनी
- जुनसुकै ठाउँमा काटेर जोड्न सकिने
- नियमित गुणस्तर परिक्षण

पुनार जोड्न सकिने



खसव र सडको खपत

सजिलो



बलियो र खपटो

थोर नजाने

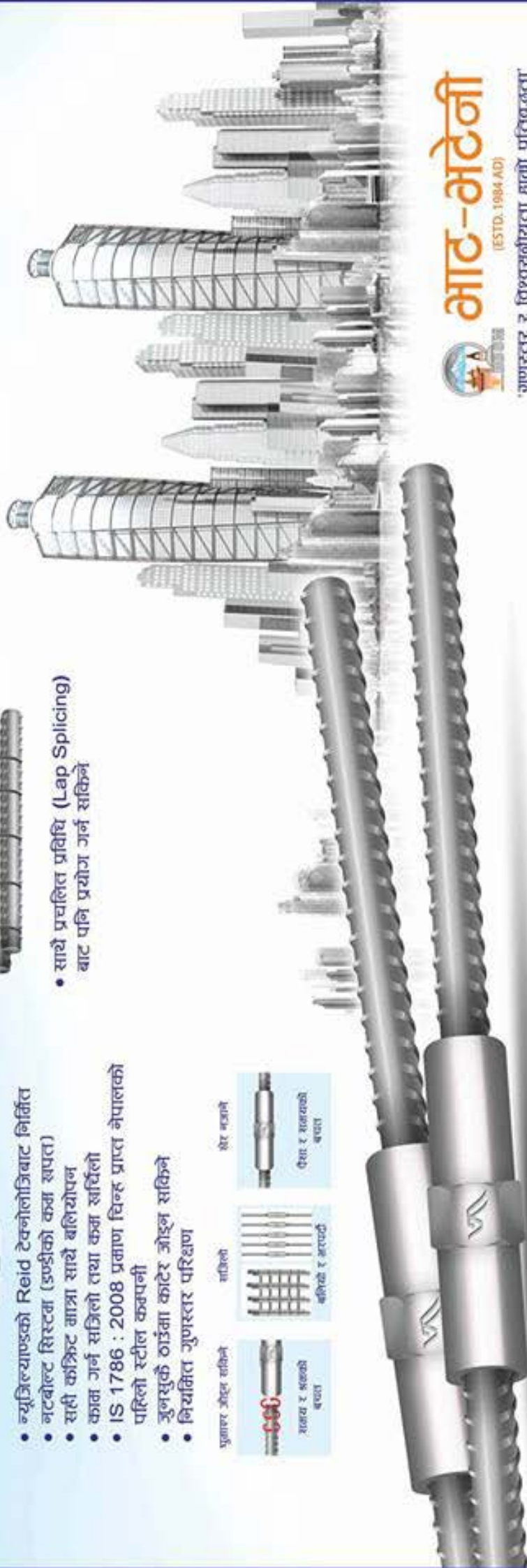


थोर र सडको खपत

पुरानो प्रविधि (LAP SPLICING)



- साथै प्रचलित प्रविधि (Lap Splicing) बाट पनि प्रयोग गर्न सकिने



भाट-भटेनी

(ESTD. 1984 AD)

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नयाँ आधार... दिगो भविष्य

INTERVIEW WITH MR. SANDEEP PAUDYAL CHIEF OPERATING OFFICER OF SARATHI CAB



"We intend to morally convert drivers to 'Sarathi' thereby turning them to be good companion for passenger's during their journey."

1. What provoked you to initiate the project 'Sarathi'?

We had been researching on transportation's scenario of our country for quite a long time. Basically, in the transportation sector there are three parties involved, Owner, Driver and Customers, in context of Nepal, all the three parties have been suffering. So, our team came up with the idea of utilizing the technologies, train the drivers, track the available taxi, and provide sound, safe and easy service to the customers, thus transforming a problem into a kind of business. Also, we noted no substantial investment vested upon this sector as normally done on hydropower, microfinance and banking, investment on transportation came out to be our priority, thus creating milestone to initiate the project.

2. How do you come up with the name 'Sarathi' for your business?

Well it's an interesting story. Our basic motive is to give customers secured, timely and safe service, for which it is obligatory to recruit good drivers. We intend to morally convert drivers to 'Sarathi' thereby turning them to be good companion for passenger's during their journey. We came up with the word 'Sarathi' in

reference to Lord Krishna being the 'Sarathi' of Arjuna in Mahabharat.

3. How do you look upon the feasibility of the project as business?

A project something like 'Sarathi' has always been the need of our time. Realizing the perks of the project from the view points of taxi owner, customers and drivers 'Sarathi' is the best choice one can make. It is never an easy cup of tea to lend Taxi worth 2.5 millions (approximately) to some uninitiated (drivers) for taxi owners. It lies on one hand being supplemented by additional complications on the side of passengers. Passengers suffer insecurity, and unavailability on required time and locations. Also, drivers suffer psychological pressure being not trusted as dignified professionals in our society and their financial obligation towards the taxi owners on daily basis add up more troubles. Since 'Sarathi' is a common situation to these, the proposal of project as business is viable.

4. How did you managed the investment and resources initially?

At the initial phase, we had gone through deep studies in this field for like 2 years. This provided us with all the

necessary information and data. The main investor for our company was 'Angel investment', which trusted our project and invested on us at the very initial phase. Likewise, we managed additional resources and funding within the team only.

5. What is the value proposition of 'Sarathi'?

Mainly for our company, the value proposition is linked between the owner, customer and drivers only. From the Owner's side, safety for his property, passenger's can enjoy secured and safe journey, also they go on meter basis along with the bill for what they are served and; drivers as 'Sarathi' equipped with good morale and respect can be termed as a value proposition of 'Sarathi'.

6. How well have 'Sarathi' penetrated in the market yet? What are the customer responses?

We have been blessed with the overwhelming response from the customers. Customers are well satisfied with the service provided by Sarathi, they are actually enjoying the introduction of new kind of technology in the transportation sector. Because of limited vehicles we are operating on currently, it has been difficult to meet up the customers demand. We have come up with the hotline number for customer service through which queries have been flooding regarding services. Our App is also in the development phase, we will be soon launching it.

7. Who are the key partners on the project?

Angel Investment is our investment partner. Rest, our core team is what we have.

8. Why is the service targeted in Kathmandu?

There are more than 10000 taxis in the Kathmandu valley only. Despite such huge number of taxis, there is a great problem with its management, be it from owners side or from the drivers itself or the related authorities. Kathmandu is a city full of problems as well as its possible solutions also. We need solutions where problems exist. Since Kathmandu is epidemically affected by the syndicate of poor service on high margins (profit), we are here to break this. Also some technical hindrances currently prohibit us from expanding our service outside Kathmandu. Yet we are planning to launch in Pokhara soon.

9. Where do you locate 'Sarathi' after 5 years?

10,000 taxis are on service in Kathmandu, which is statistically enough in number. In next five years, we plan to have 50 % occupancy in taxi service of Kathmandu valley. 10. How do you make SWOT analysis of the project? Compact team we possess and the technology we are up with, is the strength. Our team is working very hard, within the team we rarely have weaknesses, if any we will work on it to mitigate them. Enough opportunity exists since we work against syndicate and we work with 'Sarathi' rather than the mere driver. Syndicate of poor service has entangled every nooks and corner our society, which is potential threat to our project.

BEST UNIVERSITIES FOR MASTERS

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Attending graduate school at Stanford which, students can get involved in research projects, and the many companies in Silicon Valley offer internship and learning opportunities for graduate students.

Source: <https://www.usnews.com/best-graduate-schools/top-engineering-schools/stanford-university-02020>

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With A Location Like No Other, a Diverse, Welcoming, Collaborative Community, Multidisciplinary Labs, Research Centers, Museums and Institutes All on One Campus, UC Berkeley provides its students with Unparalleled Resources and Opportunities

Source: <http://grad.berkeley.edu/admissions/choose-berkeley/>

- **GEORGIA INSTITUTE OF TECHNOLOGY**



With world class faculty, Comprehensive Research, collaborative partnership and limitless career opportunities, Georgia Institute of technology's Graduate in Industrial Engineering is United States Best.

Source: <https://www.isye.gatech.edu/about/school>

- **NATIONAL UNIVERSITY OF SINGAPORE**



The Master of Science (Industrial and Systems Engineering) programme is designed to prepare individuals for a lifelong career addressing critical engineering and managerial decision making, in the manufacturing and service sectors.

Source: <https://www.isem.nus.edu.sg/ISE/>

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Consistently ranked among the best, Industrial and Operations Engineering the graduate program consist exceptional faculty and graduate students who bring high-impact research to the world while creating a hands-on learning environment.

Source: <https://ioe.engin.umich.edu/about/overview/>

- TSINGHUA UNIVERSITY



Providing emphasis on creativity and practical training through innovative teaching, and reconfigured the curriculum in accordance with the standards of top industrial engineering programs, Tsinghua University as grown up to be a leading industrial engineering program in China.

Source: <http://www.ie.tsinghua.edu.cn/eng/List/index/cid/1.html>

- STANFORD UNIVERSITY



Since its founding in 1955, Purdue's School of Industrial Engineering has played a critical role in the history of the industrial engineering. From fostering the development of computer simulation methodology to intelligent manufacturing, they have been revolutionizing IE all along

Source: <https://engineering.purdue.edu/IE/aboutus/welcome>

- UNIVERSITY OF CALIFORNIA, BERKELEY



The Master of Science (Industrial and Systems Engineering) programme is designed to prepare individuals for a lifelong career addressing critical engineering and managerial decision making, in the manufacturing and service sectors.

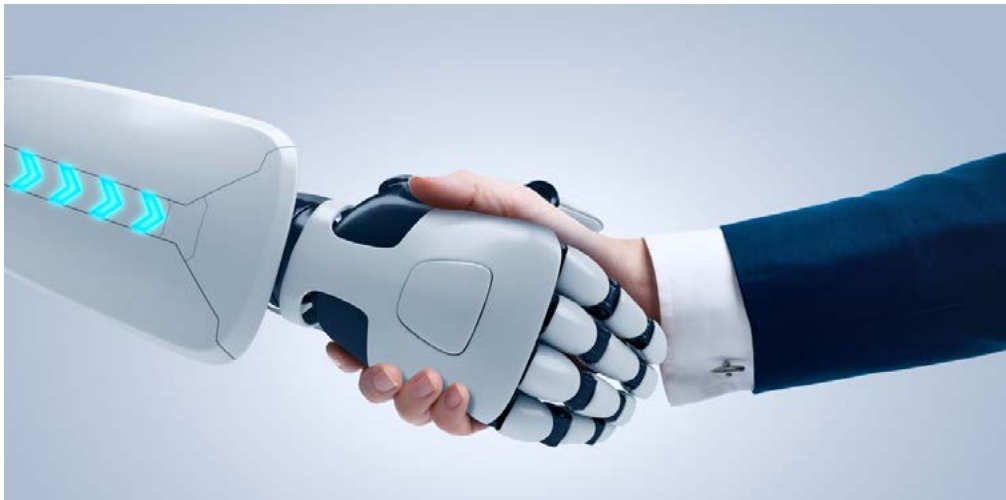
Source: <https://www.isem.nus.edu.sg/ISE/>

AUTOMATIC CONTROL SYSTEM IN NEPAL

Today manufacturing processes are effortless, transportation is safe, and life has become relaxed and comfortable all due to development of control system and automation.



Bidushi Khadka
Student of Industrial Engineering
5th Semester, IOE Thapathali
Campus
bidusik47@gmail.com



In a country where conflicts between labor and management lead to shut down of several industries, increase in utilization of automation is strongly recommended.

Imagine you decided to take a road trip. As you were driving down a highway in your car, another vehicle suddenly appears in front of you. Just as you wish to hit the brakes, you realize you have no brakes! As much as you need to steer away, this car of yours has no system to control the speed or direction of your vehicle. That would be the world without the control system. Fortunately, in the world we live in we have cars which stop or divert even without our command on detecting an obstacle. In contrast to the scenario described above, today manufacturing is effortless, transportation is safe, and life has become relaxed and comfortable all due to development of control system and automation. Did you know control systems are not just limited to machines and mechanisms? Controlling amount of chemicals in the blood, we can achieve several biological functions. A form of feedback control system is Insulin injections, which control the amount of blood

sugar.

The Control System refers to the agglomeration of systems, machines, process, or mechanisms used to maintain or alter a specific parameter to obtain the desired output. The control system which does not require human input to regulate the parameters is known as an automatic control system or automation. From simple household washing machines to high-performance fighter aircraft, the control system has an essential role in a wide range of systems. A simple example is a self-switching light-a device which is ON only when people are inside a room. In the context of Nepal where automation is not paid much attention and is still an emerging technology, investing in the automatic control system and increasing its application will lead towards the path of progress. The article provides a brief introduction to control system followed by analysis on the situation in Nepal to give recommendations about how

Nepalese people can utilize it for much-needed beneficial change.

Currently, in Nepal, automation is slightly brought into play in diverse forms in both industrial sector and day to day life. Industries extensively depend on Programmable Logic Circuit (PLC) systems for manipulation of various parameters such as temperature, pressure, and time in manufacturing, increasing the productivity of the industries. Large maintenance workshops and production houses of Nepal also utilize different Computerized Numerical Computation (CNC) machines. Fire and smoke alarms, automatic control of lights and doors through Smartphone in smart homes increase convenience. Home automation Nepal, a company which supplies products related to automation allows us to activate our security system, dim the lights and draw the curtains automatically. Similarly, it also enables exciting features including control electronics, regulate air conditioning with simple buttons 'GOODNIGHT', 'MORNING', 'PARTY', etc. on our Smartphone or tablet. Nonetheless, it is going to take a while to catch a glimpse of those inventions

in our homes, not just in the stores. "Pari," a humanoid robot that addresses and guides customers through their visit to the Durbarmarg branch of SBI bank is an extraordinary accomplishment of automation in Nepal. However, application of automation is mostly restricted to fixed process based layout of manufacturing processes in industries.

Conversely, a significant hurdle to the advancement of automation in our country is- The belief that "automation will seize all the jobs." Consequently, people demur its introduction to their lives. With automation, machines will become intelligent and furthermore efficient. Therefore, there exists a belief that accurate and diligent devices will replace their jobs and they will have nothing to do. While it is true that with automation, regular layman jobs will decrease, the later might not be correct. As Alexander Graham Bell said, "When one door closes another door opens, but we so often look so long and so regretfully upon the closed door, that we do not see the ones which open for us." A large number of people will have time to employ their minds for creative works and for learning new skills with this new expansion. Moreover, they can work on other high priority projects for our country; for instance, developing transportation, carrying out construction work for Hydropower plants e.t.c. while living a highly comfortable life that automation has to offer. The factors such as poverty, political instability, lack of investment, and, corruption stand between Nepal and automation. There exist numerous challenges before our fantasy of a time when machines perform the

assigned task “entirely” on their own comes true.

In a country where conflicts between labor and management lead to shut down of several industries, increase in utilization of automation is strongly recommended. Ordinarily, employing automation in agriculture could benefit countless farmers by making them efficient and productive. The employment of intelligent machines leads to reduced costs and improved quality which results in additional customers buying the products and eventually in the growth of the industry creating a positive impact on the economy. Automation could be the key to industrialization for Nepal where raw materials are readily available to be processed in Industries. Even effortless inventions with applications of automation could act as amenities. An example is applying automation to turn off water pump when the tank is full or to receive water automatically at the brief interval when Kathmandu Water Supply

Company sends it. The extent of benefits obtained through automation is shown in figure-1. With automation, people will not be subjected to extreme working conditions of temperature, smoke and other pollution which cause health hazards. Institutes in Nepal stick to traditional methods due to lack of skilled human resource required to operate the technology. But with automation, that will not be a problem. Although automation requires a massive initial investment, it also has a high rate of return making it an investment worth making. Increasing the utilization of automation in Nepal is sure to bear fruitful results.

Though the application of automation is increasing in both household and industrial sector, countless people are not even aware of the existence of such technology and their benefits. Moreover, an enormous gap exists between the techniques employed around the world and in Nepal. Consequently, the industries are only semi-automated. Tom Preston-Werner once said, “Either

you’re the one that creates the automation, or you’re getting automated.” Nepali citizens can be as Tom Preston-Werner said: “the one that creates the automation” welcoming automation and learning new skills instead of being someone who is “getting automated.” Accordingly, Nepal should increase automation in homes, offices, agricultural, industrial, and tourism fields.

Therefore, with proper investment and an open mind towards automation, Nepal can not only raise the living standard of its people but also carve its way to an industrial revolution leading to an economic upturn. Finally, with automation, Nepal can unleash its development potential at last.

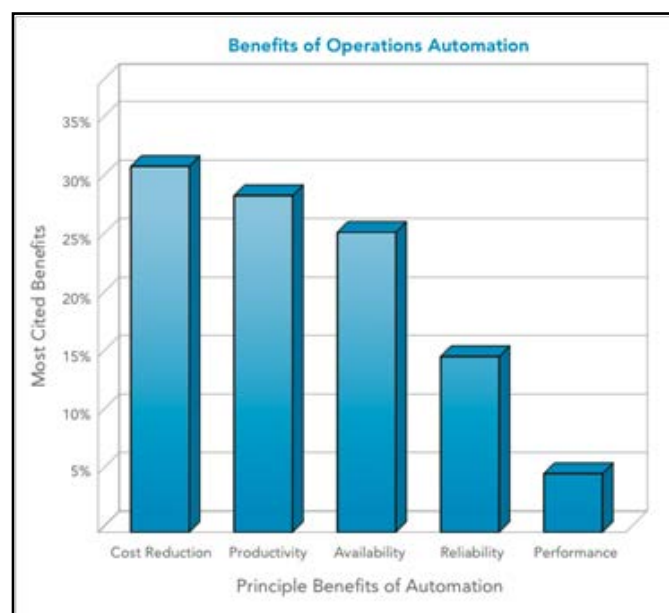


Figure: Benefits of Automation

References:

Hasan Poonawala

Quora

<https://www.quora.com/What-are-the-applications-of-control-systems>

Automatic Control

https://en.wikipedia.org/wiki/Automatic_control

Control Engineering and Robotics An Overview of Control Engineering

<https://studfiles.net/preview/1172123/page:4/>

Home Automation Nepal

<http://www.homeautomationnepal.com/solutions/residential>

Automated Operations: 5 Benefits of Automation | HelpSystems

<https://www.helpsystems.com/resources/guides/automated-operations-5-benefits-your-organization?deleted=&>

NEW PRODUCT DEVELOPMENT



Er. Ankit Shrestha
Industrial Engineer
Lecturer at Thapathali Campus
anqit.ccg@gmail.com



New product development is the transformation of a market opportunity into a product available for sale.

Along with the invention and innovation in technology in last two decades, there has been a great achievement in development of new products. Things that were once unimaginable to mankind is now just around the corner. Who would have thought that a telephone set that used to be on the table of your house could be so portable that you could carry it around in your pocket or even the desktop for that instance which we use as a portable laptop now. All these development in every sector to come up with new product time and again has been possible now. We live in such an age where human imagination has endless possibilities and anything or everything that you can imagine comes up as a product or service to you in the form of new product development.

New product development is the transformation of a market opportunity into a product available for sale. Product development, also called new product management, is a series of steps that includes the conceptualization, design, development and marketing

of newly created or newly rebranded goods or services. The objective of product development is to cultivate, maintain and increase a company's market share by satisfying a consumer demand. The product may be a tangible (something that can be touched or felt) product or intangible (that can not be touched or felt, like service, experience or belief) product. Cost, time and quality are the three main variables that drive customer needs. Generally, for the development of a new product, it has to go through following basic 8 steps, which are explained as follows:

1 Idea Generation:

The development of a product will start with the concept. Ideas can, and will come, from many different directions. The best place to start is with a SWOT analysis, (Strengths, Weaknesses, Opportunities and Threats), which incorporates current market trends. You may want to develop multiple versions of your road map scaled to suit different types and risk levels of projects.

2 Idea Screening:

This step is crucial to ensure that unsuitable ideas, for whatever reason, are rejected as soon as possible. Ideas need to be considered objectively, ideally by a group or committee. Set specific criteria for ideas that should be continued or dropped. Stick to the agreed upon criteria so poor projects can be sent back to the idea-hopper early on.

3 Concept Development:

You have an idea and it's passed the screening stage. However, internal opinion isn't the most important. You need to ask the people that matter – your customers. Does the consumer understand, need or want the product or service? Using a small group of your true customer base, those that convert the idea need to be tested to see their reaction. The idea should now be a concept, with enough in-depth information that the consumer can visualize it. Do they understand the concept?

4 Business Strategy Development:

Once the concept has been tested and finalized, a business case needs to be put together to assess whether the new product/ service will be profitable. This should include a detailed marketing strategy, highlighting the target

market, product positioning and the marketing mix that will be used. During the New Product Development process, build a system of metrics to monitor progress. Include input metrics, such as average time in each stage, as well as output metrics that measure the value of launched products, percentage of new product sales and other figures that provide valuable feedback. It is important for an organization to be in agreement for these criteria and metrics. This analysis needs to include: whether there is a demand for the product, a full appraisal of the costs, competition and identification of a break-even point.

5 Product Development:

If the new product is approved, it will be passed to the technical and marketing development stage. This is when a prototype or a limited production model will be created. Prototypes may be modified through various design and manufacturing stages in order to come up with a finished product that consumers will want to buy. This means you can investigate exact design & specifications and any manufacturing methods, but also gives something tangible for consumer testing, for feedback on specifics like look, feel and packaging.

6 Test Marketing:

Test marketing (or market testing) is different to concept or consumer testing, in that it introduces the prototype product following the proposed marketing plan as whole rather than individual elements. Before most products are launched and the manufacturer spends a large amount of money on production and promotion, most companies will test their new product with a small

group of actual consumers. This process is required to validate the whole concept and is used for further refinement of all elements, from product to marketing message. Arranging private tests groups, launching beta versions, and then forming test panels after the product or products have been tested will provide you with valuable information allowing last minute improvements and tweaks. This helps to make sure that they have a viable

product that will be profitable, and that there are no changes that need to be made before it's launched.

7 Commercialization:

When the concept has been developed and tested, final decisions need to be made to move the product to its launch into the market. At this stage, your new product developments have gone mainstream, consumers are purchasing your good or service, and technical support

is consistently monitoring progress. Pricing and marketing plans need to be finalized and the sales teams and distribution briefed, so that the product and company is ready for the final stage. Refreshing advertisements during this stage will keep your product's name firmly supplanted into the minds of those in the contemplation stages of purchase.

8 Introduction / Launch:

Finally, when a product has made it all the way through the new product development stage, the only thing left to do is introduce it to the market. Once this is done, good product life cycle management will ensure the manufacturer makes the most of all their effort and investment. A detailed launch plan is needed for this stage to run smoothly and to have maximum impact. Most new products are introduced with introductory pricing, in which final prices are nailed down after consumers have "gotten in." It should include decisions surrounding when and where to launch to target your primary consumer group. In this final stage, you'll gauge overall value relevant to COGS

(cost of goods sold), making sure internal costs aren't overshadowing new product profits. You continuously differentiate consumer needs as your products age, forecast profits and improve delivery process whether physical, or digital, products are being perpetuated. Finally, to learn from any mistakes made, a review of the market performance is needed to access the success of the project.

Product development is an always-evolving and fluid process, and just as some steps will change, depending on the nature of the project, so will the person who manages product development. Having your entire team working in tight synchronicity will ensure the successful launch of goods or services, even if reinventing your own wheel. Productivity during product development can be achieved if, goals are clearly defined along the way and each process has contingencies clearly outlined on paper. New product development can be made much simpler and focused, with a higher likelihood of success, by following these steps to guide you.





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What is the best way to prepare for GRE in a month?



"The best way to prepare for GRE is to give it more than a month, but the world is full of people who got huge scores on the GRE in less than 30 days. In our experience, here are some things those people did that set them apart, and enabled them to break the 325 barrier with a time investment that was much lower than that of anyone else. Here it is – the blueprint for a 30 day 330:

- 1. Postpone all other commitments:** you should have all day for GRE preparation: If you have a month, you can definitely get a great score, but only if you prioritize GRE preparation over everything else. You need to take time off from whatever else you're doing and reserve a 10+ hour block every day for GRE time. As time goes on over the month, you will need every second of it. Reserving this time for GRE prep will also increase your commitment level; you are essentially telling yourself how important it is, and making a firm resolution to give it your everything, and perform as well as you possibly can.
- 2. Get a coach:** You should not do it alone – you need to work with someone who has a history with helping people crack the GRE in an extremely short period of time. Whether it's an individual mentor or a coaching centre, you need to evaluate the level of access you will be given, the level of resources you will be able to get, and the quality of the advice you will get. Remember, you can only be as good as your coach.
- 3. Get the resources:** Once you've signed up with someone to train for the GRE with, you need to lock down all your learning and practice resources. The practice resources should be easy – most such places have extensive libraries, and you should choose one with as many practice tests as possible. The preparation resources should be chosen for their probability of success and quick absorption capacity rather than their extensiveness. You don't want to learn everything; you want to learn that which will most likely stand you in good stead. Ask all the right questions when you are being given study material and practice books; it will only help make your month more efficient and focused.
- 4: Create a practice test timeline:** One thing you need from day 1 is a timeline of when you will take practice tests, and you should use your coaching centre to make the tests frequent and graded in difficulty. Only by taking many practice tests can you truly immerse yourself in the world of the GRE, and get comfortable with the interface, the question grading, and the 4 hour grind of sitting in one place using your brain for a lot of different things. In a one month prep period, practice is as important as new learning – maybe even more!
- 5: Study Verbal smart:** GRE Verbal is not something that is the exclusive preserve of those who have vast vocabularies, or those who have spent a year improving their word power. Instead of studying 3000 words, you can group those same 3000 high-frequency words into about 300 high probability word groups, within which every word has the same meaning. This is a 90% reduction in meaning memorization, and converts a lot of rote learning into pattern recognition, something which correlates more highly with intelligence and logic, and less with time spent in preparation. Study Verbal smart and a month is more than enough.
- 6. Practice Quant smart:** Quant is all about understanding and practice. If you had 3 to 6 months, you might have spent a lot of time in understanding before you moved on to practice. In your shortened time window, you might be well served to prioritize topics that you are confident that you know and quickly practice a representative cross section of problems from those topics. If you ace all of them, you can cross that topic off your preparation list. This ensures that you are able to reduce the list of chapters that you revise in detail by up to 80%, and helps you concentrate on and treat your weakest areas.
- 7. Slow down in the last two days:** You might spend the entire month like an speeding bullet train, but the last few days should be more relaxed. You want to peak during the test, and the best way to do that is to make sure that your body is in the best condition possible. One or two days before, shift to a routine of long sleep hours, alertness spikes at the time of the test, and complete physical training.

All the best!

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अग्नि सिमेन्ट इन्डस्ट्रिज प्रा. लि. को उत्कृष्ट उत्पादनहरू



विश्वास, मजबुती र सुरक्षा हरेक निर्माणको भरोसा

विद्यार्थी बचत खाता



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राष्ट्रकै उन्नति
आजै देखि बचत गरौं है साथी ”

Manisha Koirala

मनिषा कोइराला



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MR. PRADEEPMAN PRADHAN

Executive Director - HITCO Pvt. Ltd.

”

INTERVIEW WITH MR. PRADEEPMAN PRADHAN

It's all about a man's vision and ability to grasp the right opportunity.

From failing in school to changing his falling father's company to the country's leading machine supplier, Mr. Pradeepman Pradhan is currently CEO of HITCO Nepal and joint treasures of NADA. Here, we have an interview with the inspiring business mogul.

Q. Tell us something about yourself and HITCO.

A: According to Hindu culture 1st Ashwin is celebrated as "Bishwokarma Puja", where we worship the lord of machines. Coincidentally I was born on the same day and am working on the same field. My father was a government officer and served in various sectors of the country. During his days at government offices, he had noticed that we don't have anyone to supply machineries and importing machines was difficult. Due to his job, he had frequent transfers (posting) from one place to another. Meanwhile, my grandmother was getting old. So, my father planned to live with my grandmother and he resigned from his job. Then after, coming back to home, he started a business which supplies machineries and equipment for the livelihood. This is how HITCO started. HITCO private limited was officially inaugurated in 2032 B.S. During those days, all equipment were not available at once. Whenever there were tenders for different projects by ADB, World Bank, whole materials had to be bought by the government everytime. So initially, HITCO started its work by accepting the tenders for the projects from government, supplying the required materials and fitting them as well. At a certain phase, HITCO went to the phase of insolvency, we were completely in debt and my father was about to close the company, then after, being the eldest son of my family, I took the responsibility from my

father's shoulder and started operating the company and then after, I never looked back. Currently, HITCO is serving in the firefighting, security, automobile sectors, compressors, pneumatic compressors, etc.

Q. How did your collaboration with some leading vendors in the world like ELGI equipment started?

A: During the insolvency phase of company, there was a huge burden for me. We had to pay the debts of vendors and clear all the loans. Searching for the solution to all these problems, I met with the ELGI group. The main product of ELGI group is compressor, and its side wing is automobile. HITCO started working with ELGI in 1984 AD. Now, I am like family to ELGI group, that's why we always support the company's mission. ELGI started its plant in India for automobile. Since for automobile parts compressor plays a vital role, ELGI started focusing on compressors instead of automobile.

Q. Could you please explain about the automobile sector scenario of the country?

A: Our country is currently in the phase of development and automobile sector is one of the very important part for the overall development of the country. But development of automobile sector has been taken in the wrong way and blamed for pollution. Automobile sector provides opportunity to all the people. Mobility of goods and services

from one place to another is possible only if there is proper automobile facility and services. It should always be taken as an opportunity. From transportation of heavy equipment's for construction from one location to another to mobility of general public, automobile is very important. Automobile sector has a great importance but the bureaucrats and policy makers must take it in a positive way and should work for the upliftment of this sector.

Q. Is it possible for Nepal to manufacture auto parts in country only?

A: Talking about manufacturing auto parts, the major obstacle is open border between Nepal and India. It is easy for people to go and bring parts required for personal vehicles without any taxes. Nepal has very small market for the parts so it would be quite difficult for the company to sustain in the market. Also at first, we need plants which manufacture the side components required to run an automobile part manufacturing industry. As an illustration, Colgate started its manufacturing facility for the production of toothpaste in Nepal. For this, it required various side components in bulk like the tube, cap and cardboard boxes. Consequently, all small factories were established in order to fill the demand of the Colgate. So, yes, it is possible to manufacture auto parts in our own country, but it's pointless unless we have demand in the market. Demand along with assembly plants, equipment manufacturing plants, etc. would make production of automobile parts within the country feasible.

Q. Being involved in the industrial sector for so long, can you please elaborate some basic criteria for opening an industry in the country?

A: For opening any kind of industry, first and foremost, there must be a suitable environment. Then after, proper infrastructure, access to market, labor law, must also be considered. The policies made by government must be clear and to the points, there are many loopholes in the policies of government, they must be mitigated. Investment in industries have a very longer payback period, so there must not be any obstacles related to labor, resources, materials, energy, etc. Also, in context of our country, we should target the international market instead of just local market to succeed. The policies of the company should be carefully selected and should be well defined.

Q. How can an Industrial Engineer contribute in the industrial sector for the development of country?

A: Industrial engineers, have an essential role in the industrial development of country. Government is currently planning in developing industrial zones in every district of country, so Industrial engineers will have a major responsibility and importance in successfully establishing these zones. There may be problems within our country, but you Industrial engineers must be there for your motherland, for the development of our nation. Nepal is in development phase and you should work hard and work together for the development. We need skilled manpower in our country for its development. With a learning attitude, dedication

and ability to struggle, you could be the engineers building our nation.

Q. How can Nepalese products compete with foreign products?

A: The competition is either by exporting products made in Nepal or by substituting the import of foreign products. For, export we have limited products and insufficient technical knowledge. Nepal is a landlocked country which makes it extremely difficult for transportation of products. We can export products which do not require transportation such as software. However, it is possible to compete with foreign products. For example: People used to transfer money through Western Union money transfer. Later to compete with that, Mr. Chandra Prakash Dhakal's IME took a step and established a remittance company. Everybody has a sentiment for national products rather than foreign ones; and this helped IME a little to rise to the heights of success. It's all about a man's vision and ability to grasp the right opportunity. We have comparative advantage of cheap labor potential

of unlimited energy with hydropower in our country. So keeping both the limitations and opportunities in mind, we can compete with foreign products.

Q: Do you have any plans about shaping the automobile sector of Nepal?

A: Regarding the whole automobile sector of the country, Plans are to be made by the government, we can just suggest the government. Recently, due to pollution, global warming and various other factors, fossil fuels are being avoided worldwide. The emerging technology for Automobiles is Hybrid and electrical vehicles which also happens to be the necessity of Nepal. But for that, we need energy. Our vehicles should not run out of charge midway to destination. Moreover, we need a place to safely dispose the batteries, which is a hazardous product. With our energy potentials, monorails, trams metros and other electric public transportation are possible in Nepal. But for now, we should focus on increasing the reach of transportation as it is the backbone of development. If government provides us

with Auto land where we have access to energy and sufficient land where we can focus on development of the field without disturbing people, we could progress on the field. We are in hope of cooperation and stability from the government.

Q: How do you balance your personal and professional life?

A: Honestly, it's not easy. Even when I'm at home, my office work thoughts cross my mind at times and I have to handle mails and phone calls at home too. I find myself extremely lucky as my wife handles my home. Though our work influences lives of so many people and it is really important, we have to separate time for our family as well who are the ones that will actually be there for you and I try my best to manage time to be with them.

Q: Any message to the readers?

A: Firstly, for those of you who are working in the technical sector, I have a soft spot for all of you. Though I have a background of commerce, I have met many people working in

the technical field and they have helped me a lot along the way. Though I generate ideas, they can't be fulfilled without the help of you technocrats. However, these days it's hard to hold on to your technical staffs. We train them, they work for us for a few years and they go abroad. We should all work together for the economic development of the country. We should not just seek a comfortable life and give up on something great by settling for something just fine. Work hard and work smart, observe the people around you and have a learning attitude take risks; it is going to be a difficult journey and you will want to avoid it but when you achieve your goals and help develop not just yourself but also your country, the satisfaction you get, nothing can beat that feeling. Don't wait for opportunities to come to you, create your own opportunities. No matter what, we should never forget our love and responsibilities towards our parents and our country. Nothing is going to happen by our individual progress as long as the nation's in crisis.

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AGRO-ENTREPRENEURSHIP: OPPORTUNITY FOR YOUTHS

"Business of a Grain is worth of millions of smiles."



Manish Gautam
BSc Ag, Fourth semester
Agriculture and Forestry University
Rampur, Chitwan, Nepal
manishgautam851@gmail.com



Opportunities are lurking in the plains of terai and on the slopes of hills, where youths can grow their own money and contribute something for the national economy as well as feed the country

It makes us wonder why go gulf nations to earn mere 60k per month when we can earn enough in our own nation; Why go and waste your sweat and blood when our sweat can irrigate our own land.

Most of the communities of Nepal comprise of disadvantaged youths whose weak economy offer them few possibilities to obtain decent employment and the number of these youths are growing each day. The need to create viable economic opportunities to engage youths is urgent since current youth bulge offers unprecedented opportunities for practitioners and governments to harness the energy, motivation and innovation of these young people to bolster economic development and social change, while addressing food security needs at the same time. For youths in particular, new business creation in agriculture sector can present an important and viable opportunity to earn a decent living. Amidst

ample potentialities of agricultural upliftment in our country, very little exemplary evidence exists proving Agro-entrepreneurship as a worthy option to provide young people opportunity within the value chain. Frequently being referred as an Agriculture based nation, the people involved in agriculture in Nepal has dropped drastically within few years from 80% to almost 60% only. However, the agriculture production has not decreased as much which proves that the number is alone not the significance of development, but the strategy, plans, technology and practices matters the most. That said, most of Nepalese youths are more or less familiar with informal agriculture in some way. However, the curtain that hides the potential of a grain of rice to become gold is still upraised among youths thereby compelling them to elope to foreign countries. Youths may not see Agriculture as an attractive or viable career option given such obstacles as geographic

isolation, unfriendly land use policies, poor infrastructures, high transport costs and unavailable agriculture inputs. Nonetheless, several potential opportunities tag along agricultural value chain creating a platform for numerous youths to engage in productive work.

Agro- entrepreneurship by youths is achieving a new dimension in our country with proper trainings and guidance in agriculture sectors. Further, the establishment of one and only Agriculture University is a milestone in producing young agriculturist who will later become a researcher, farmer, specialist and an Agro-businessman. Opportunities are lurking in the plains of terai and on the slopes of hills, where youths can grow their own money and contribute something for the national economy as well as feed the country. In designing Agricultural entrepreneurship programs, it is vital to have a holistic view of the agricultural value chain in order to better understand the opportunities available to young people. Youth may find that their skills, interests, or talents are best aligned with multidimensional aspects of the agriculture value chain other than actual farming. It means everyone doesn't need to dig the

land and each individual doesn't need to be present in the field. Youths can be involved in the distribution of agricultural inputs, farm financing, the production and manufacturing of more processed goods based on farm crops and the marketing and sale of farm outputs.

Agro-entrepreneurship exposes young minds to other ways of doing business as well like feed production can be associated with poultry farming; fertilizer manufacture can be linked with growing crops and moreover technical aspects in agriculture activities even creates a platform for different faculties like engineering too. Showing young people that there are a variety of jobs in and around the agricultural sector and exposing them to these careers helps them imagine more options for themselves. A program should be started that establishes linkages with relevant sectors of the agricultural value chain which will be more effective at preparing young people for and connecting them to those opportunities. Identifying synergies between agriculture and other sectors helps enable youth to engage and participate in the value chain more proactively, which can have the ripple effect of creating more jobs. By incorporating a value chain approach—and not just focusing on farming—a program can create space for innovation, entrepreneurship, employment, access to markets, and increased productivity and efficiency.

Agro-entrepreneurship is an opportunity for youths but very few young entrepreneurs are successful. The main hindrance for a youth Agro-entrepreneur who use personal and family savings to start an enterprise may



eventually encounter limits on how much their business can grow if it is not supplemented with external investment. Most of us Nepalese youths are from middle class family and cannot afford a huge startup investment. Therefore, financial hindrances have always been a major obstacle for preventing youths to involve themselves in entrepreneurship. Some youths have overcome this challenge by accessing grant facilities that specifically targets young entrepreneurs and youth-led start-ups from various organizations and NGOs. Nepal Government has made provision to give away loans to young people for their academic certificates. This provision is great method to encourage youths to lead their own startups and this helps youths to solve their financial problems as well. Similarly, Youth to youth led grants helps young entrepreneurs and youth led organizations to create employment for themselves and their peers, by challenging youth to develop innovative ideas and providing capacity building and implementation support. In addition to that, projects led by NGOs, INGOs and government should include components that stimulate youth entrepreneurship by creating partnerships between microfinance institutions and providers who offer youth training in business-related skills in Agriculture sectors.

“Zero Hunger”, number 2 of Sustainable Development Goals (Among 17 SDGs) depicts that responsible consumption and production of food is a must in order to face the food crisis we are bound to face in near future as a consequence of huge population. Our country needs to be wary of this issue as well, since our food supply is largely dependent upon India. Once food insecurity problem arises, we will undoubtedly deprive of hunger since everyone needs to feed their own mouth first. Thus Agro-entrepreneurship is not only an opportunity for youths; it is a business worth earning respect for national contribution as well as a sufficient amount of profit.

Mr. Tej Bahadur Gurung of Maimajhuwa planted 200 kiwi plants on 10 ropanis of land normally reserved for growing maize. “It is easier to grow kiwis than maize; it is less time-consuming and less work. Plus, it yields greater economic benefits,” he said. Last year, he sold about 50 kg of kiwis for NRs 60 per kiwi; his projected yield this year is 150-200 kg. With the time saved, he and his wife were able to devote more time to other crops. Mr. Gurung also runs a nursery with approximately 1,000 cuttings; which he sells for NRs 400-500 a piece (news section). This is just one example of how kiwi farming

has taken hold in Ilam and is providing alternatives to local farmers and how agro-entrepreneur has become a the major source of the farmers income. Apart from this, Coffee cultivation, Rabbit farming, Goat farming, Sericulture, Poultry Farming, Ostrich farming and Fisheries are some of the most popular agriculture business adapted by farmers and young entrepreneurs. Recently, the idea of Snake Farming is also being popular but people are unable to predict the risk of the business. However, if one is ready to bear the risk of snake farming, he is sure to get success since it possess a lot of potentiality of Anti venom, Leather products, meat and Tourism as well. Thus, the immense possibilities of agro-based industry enables the farmer to earn 1 lakhs to 3-4 lakhs per months in his own home creating numbers of small opportunities for other people as well. It makes us wonder why go gulf nations to earn mere 60k per month when we can earn enough in our own nation, why go work for others when we can give work to others, why go and waste your sweat and blood when our sweat can irrigate our own land.

I have planted a cauliflower once in my childhood, watched it grow each day, waited for the flower to bloom which I know now was an inflorescence and eagerly waited for the first harvest. That time, I cut the cauliflower, held on my hand and a curve emerged on my face. Today I am a youth, and I aim to plant millions of cauliflower; this time I will hand over them to some other hands and I will create trillions of curves on trillions of faces. Agro-entrepreneurship is not the business of a single farmer alone, it is the achievement of numerous hands put in action for a proper goal of achieving profit along with contribution. Youths are the change makers, the pillars of society and it is upon them to be an Agro-entrepreneur and serve the nation while earning for themselves. Being a Youth Agro-entrepreneur, one must realize “Business of a Grain is worth of millions of smiles.”

Sources:

ICIMOD

<http://www.icimod.org/?q=7905>

International Products Corps

<https://www.ipcol.com/assembly-lubricants/industries/agriculture>

STARTING A BUSINESS???

Do you qualify as an entrepreneur? Let's hear from established Nepalese Entrepreneur.



Bibita Koirala
Member, Entrepreneur for Nepal
bibitakoira73@gmail.com



Great guts are definitely essential for business starter.

"Employee mindset tends to make your vision limited whereas sky is the limit for entrepreneurs."

These days it wouldn't be any hard to reach an entrepreneur, but how do you find a good one, the best one? It has become the general question how can one become a perfect entrepreneur. Is it that you need to have some kind of degree in some specific field, or some level of trainings, or some degree of study that isn't a degree per se. Certainly the act of starting a business of one's own from square one asks a wide range of talents in an entrepreneur. These skills couldn't simply be gained by any bachelor's degree, the broad field itself calls for accumulation of knowledge and skills from actual experience through times. It is not the case that it takes a big amount of time, it's the traits within a self that fulfill the necessity. We, the Entrepreneur for Nepal, have compiled a series of tips and lessons about starting your business, which is taken from established Nepal-based entrepreneurs speaking at the Entrepreneurs for Nepal forum.

1. Success takes patience and endurance:

Great guts are definitely essential for business starter. Min Bahadur Gurung waited

almost for a decade before he expanded his one-room cold storage shop to a small department store, which then went on to be today's Bhat Bhateni Supermarkets at more than one locations.

2. Know yourself and how are you thinking:

Karna Sakya, the man behind tourism development in Nepal, suggests that capital is not everything, subjects and thinking are the most crucial thing. He has devised a test that helps you find out how you work, how you value time, and what your values are. His point is that unless you really know what you are good at, and how you function, you are not likely to be a success.

3. Know the strength of others you are working with:

You can be unique but you can't do everything by yourself. Teamwork overcomes the weakness of individuals. Ichhya Raj Tamang of Civil Group says that working well on a team is a function of knowing and using the strengths of other team-mates toward your goals. And knowing a partner better is one step ahead to start delegating responsibility. He keeps quoting the statements

from Henry Ford's – "Coming Together is a beginning, keeping together is progress, working together is success."

4. Honesty is the key:

Min Bahadur Gurung says that long-term business success is anchored on honesty, and on mutually trustworthy relationships with your financial institutions, creditors, debtors, co-workers, employees and customers. Be honest because its lack casts shadows on other qualities.

5. When choosing partners, do your homework well:

Mahendra Man Shakya of Momo King says that most mistakes are made in Nepali businesses when people get into business partnerships without doing the necessary background research and without asking themselves some tough questions which need to be answered and understood upfront. There is no fun in quarreling with your business partners when things go wrong, which there surely will be at some point in the business.

6. Aim for precision in communication:

Jonas Lindholm, a Swedish entrepreneur in Nepal says that bad communication lies at the heart of many business failures and misunderstandings. In Nepal, often, people say 'yes' too eagerly, without being aware of what they can do and what they cannot do, and that can

be a problem when things do not go right. Say what you mean, and mean what you say.

7. Analyze your mistakes to learn from them:

Gyanendra Pradhan of HydroSolutions says that a good habit an entrepreneur needs to develop is an ability to reflect upon one's mistakes, and learn from them without getting stuck in the past. This habit can be cultivated through conscious practice and reflective experiences. Learning from the mistakes is the way to get past the doubts.

8. Hard work is the only way to success:

Mrs. Ambika Shrestha of Dwarika's Hotel, says that she attributes her success to her ability to work very hard when she was young. No work was beneath her, and she made many, many sales calls and visits to sell her hotel's and travel agency's offerings. In addition to this she shares, "Employee mindset tends to make your vision limited whereas sky is the limit for entrepreneurs."

9. Persistence is important:

Ajay Ghimire, CEO of Vibor Bank, says that he looks for a sense of persistence when dealing with entrepreneurs. Those who are persistent are likely to not get disappointed with failures and setbacks, and have the energy and willpower to push ahead to success.

10. Entrepreneurship is the art of selling:

Ajay Ghimire believes that whatever an entrepreneur does, success comes from an ability to sell ideas, concepts, good and services to others. This is why, an ability to sell what one knows and makes is a critical skill to have.

SUSTAINABLE DEVELOPMENT **GOALS**



SOCIAL MEDIA AND CYBER CRIME THROUGH IT

You could be an easy target, do you know the basic, have you got a secure password.



Inspector Sunil Kumar Baranwal
IT Officer, Computer Directorate
Police Headquarters
sunil3445@gmail.com



Organized crime- "Any group having a corporate structure whose primary objective is to obtain money through illegal activities, often surviving on fear and corruption."

Social Media is the medium through which we share our requests and needs within our surroundings, family, and society by the use of electronic components and internet. It has become a phrase that we throw around a lot these days, often to describe what we post on sites and apps like Facebook, Twitter, Instagram, Snap chat and Google talk others. It's a platform of exposer, attraction, and virtual

brands, connect with current customers and foster new business.

Social Media is the branch of Information technology which is playing great roles in the present transitional phase of human civilization. Internet along social media is great resource for business, political expression, art and learning.

Major contributions are listed below:

experience of this during Earthquake and flood where many of organizations and the social groups brought their hands together across the country and utilized this platform to collect fund for the victims.

- It's a form of political influence; the active participation of social media users has been an increasingly important element in political communication, especially during political elections. Even we can see the political campaign utilizing these media as a great tool to motivate and promote their party agenda. A very small issue goes viral in a jiffy and the scenario changes for the politics, we have experienced it in our last election.

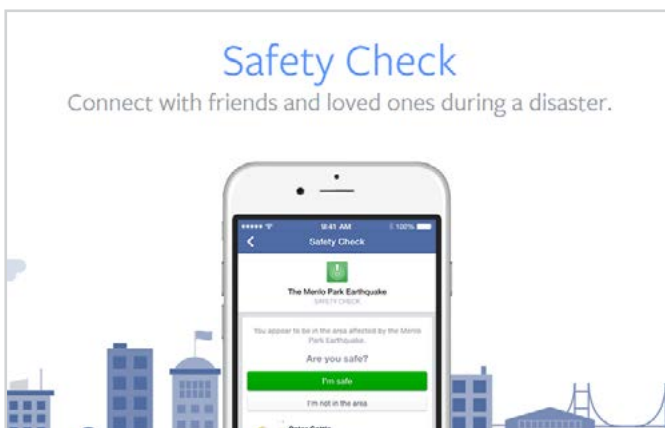
into their life, and it's nice to have a way to check in on their updates.

- It revolutionized brand engagement; social media has brought revolution in the marketing field. People like to see brands respond when they comment on a Facebook post or mention the company in a tweet. The use of social media to handle the bulk of customer service inquiries is slowly becoming standard practice. Interaction fuels sales and social media agencies know that it is the key to brand success in a digital world

- It's a valuable aid for crime-solving and crime pattern analysis; Believe it or not, social networking is providing officers new avenues and tools to help them solve crimes. The Police department is using social media as an asset to investigate criminal using their profile and connectivity with other criminals around the world and find out the network. Nepal police have launched Hamro Police mobile app through which we can give information for the crime prevention activities.

- Exacerbates Unhappiness: We've established that the act of using social media can stir up many emotions, and using it too excessively can create a detachment from real life. Numerous medical studies indicate that social media may exacerbate your major emotions including unhappiness, depression.

Nowadays a very interesting trend has emerged in our society that family members are fond of creating a new Facebook account for their children from the day he/she is born. But 60% of the social site and mobile app users are not aware of the mode of crime being committed through and by social media. Crimes act constitutes as an

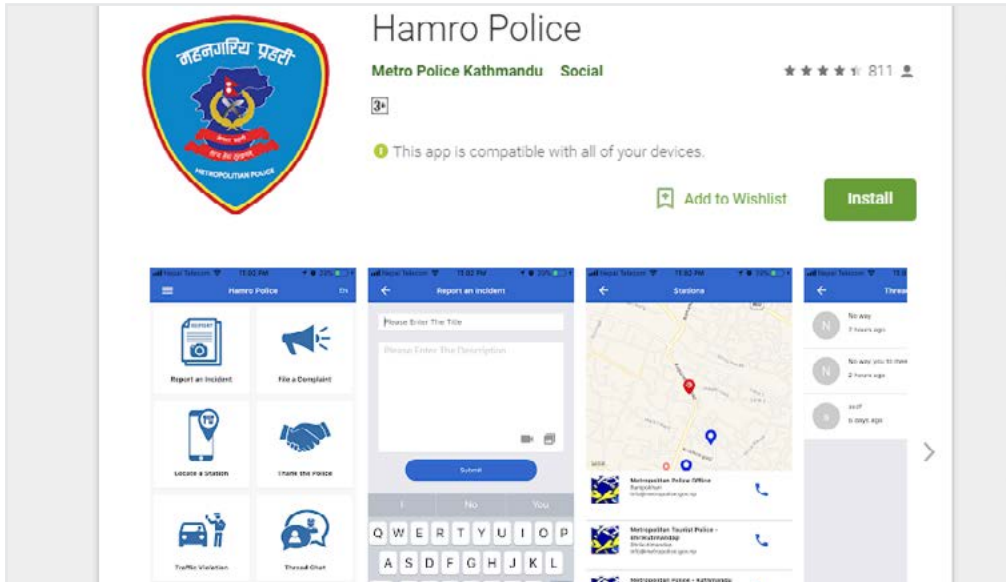


satisfaction. For the business, it has become great space to market products, promote

- It's a forum for support and safety information during a crisis; we have better the



- It's the best-yet way to connect across vast distances without having to waste money for international phone calls via messengers with all our sentimental feelings. We can reconnect with our people even after years searching them. We can see their pictures and take a glimpse



offense; could get to different degrees; which can be categorized as a harmful act. In addition to that they turn out to be financial and mental burdens on society.

Cybercrime:

Consists of specific crimes dealing with computers and networks (such as hacking). The facilitation of traditional crime through the use of computers (child pornography, telemarketing /Internet fraud, Social crime etc.). Today computer viruses and trojans are designed to everything from stealing data to watching one in one's webcam and to the theft of billions of wealth.

Organized crime- "Any group having a corporate structure whose primary objective is to obtain money through illegal activities, often surviving on fear and corruption."

- Interpol

According to "The Electronic Transactions Act, 2063 (2008)": an offence shall be liable to minimum punishment with a fine not exceeding fifty thousand Rupees or with imprisonment not exceeding six months or with both to maximum with a fine not exceeding Two Lakhs Rupees or with imprisonment not exceeding 5 Years or with both depending on the degree of the offence.

Crime using Social Media:

Social networks provide rich opportunities for

making new friends, sharing interests with others and even finding romance.

According to a Threat Report: the primary motive behind social networking attacks is monetary gain. Constantly in search of new ways to make money, cybercriminals have found ways to monetize data available on social networks.

Mode of Cyber Crime using Social Media:

- Fake Offers, which often requires the user to share credentials.
- "Like jacking", whereby fake "Like" buttons install malware to ultimately gain access to the user's computer.
- Fake Plug-ins, tricking users to download fake Internet browser extensions, which can pose as legitimate extensions, but in reality, steal sensitive information from the infected machine.
- Fake Apps, tricking users to install a supplemental application that appears to be integrated for use with a social network but is used to steal access credentials.
- Social Engineering: It includes extensive research information (legal and illicit) about an enterprise, which is gathered and used to exploit people. Successful social engineering results in partial or complete circumvention of an enterprise's security systems. The best firewall is useless if the person behind it gives away either the access codes or the information

it is installed to protect.

Social engineering principally involves the manipulation of people rather than technology to breach security.

• Fraud Schemes:

There are a variety of Internet fraud schemes being used by cyber criminals at any given time. By way of example, a recent fraud scheme involves a cyber-criminal gaining access to an unsuspecting user's e-mail account or social networking site. The fraudster, who claims to be the account holder, then sends messages to the user's friends. In the message, the fraudster states that he is on travel and has been robbed of his credit cards, passport, money, and cell phone; and is in need of money immediately. Without realizing that the message is from a criminal, the friends wire money to an overseas account without validating the claim.

• Phishing Scams:

Phishing schemes attempt to make Internet users believe that they are receiving e-mail from a trusted source. Phishing attacks on social

networking site users come in various formats including messages within the social networking site either from strangers or compromised friend accounts, links or videos within a social networking site, profile claiming to lead to something harmless that turns out to be harmful, e-mails sent to users claiming to be from the social networking site itself.

Social networking site users fall victim to the schemes due to the higher level of trust typically displayed while using social networking sites.

• Child pornography:

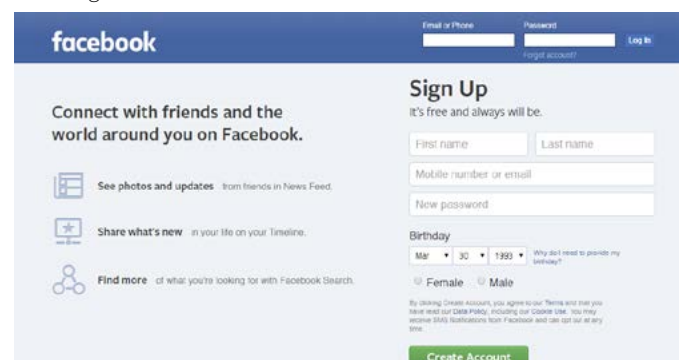
Child pornography refers to any content that depicts sexually explicit activities involving a child.

• Making Fake Account and Harassing:

This type of crime is very common in South Asia and mainly in Nepal. 90% of Cybercrime case complains are registered for this issue in Nepal police units. But it is very hard to find the criminal if he/she is not in Nepal. There is no legal agreement between Nepal Government and Facebook or other social site Company to share all information. Police use different IP tracing technique and other tools to locate the criminal. Mostly the fake accounts are deactivated on some request to Facebook Company.

Precautions to be safe from being Victim:

We feel happy and proud to share every bit of personal moment we spend in our life (like @5:30 drove through Palpa or Landed exactly at 4:00PM at Pokhara airport) in Social media, but this



Features

can lead to big problem or life threatening risk from the security point of view. Remember, someone might have been chasing you.

- Does this login page looks original?

No. It was part of a phishing campaign to steal passwords. Be aware.

- **Resist Your Curiosity:** You will find many click buttons or arrows showing adult contents. Malicious spam remains a major threat to many organizations. You are actually inviting hackers to make your system infectious.

- **Stay Safe While Mobile:** Malware is no longer limited to just PCs

- **Be careful what you click on Facebook, Twitter, LinkedIn and other popular social:** you will no longer be able to save your credentials.

- Never Accept or send request to unknown

- **Use Proper Privacy Settings in your account:** Who can search you? Who can see your posts, who can contact you? etc.

- Use Proper Timeline and Tagging setting in your account

- Use Proper apps setting in your account

Common tips for the most careless and overconfident users to be safe from Being Victim

- Never Give your credential like personnel password to anyone you trust enough.

- Put strong password and Revise it time and again

- Only share and click-on posts from trusted sources and be mindful that it's possible your friends are sharing malware.

- Make sure you use a different password on each of your sites and online services, so if one is compromised the others are still secure.

- Make sure you Don't forget to logout properly from your social site or mail accounts

- Look for and read carefully the sites privacy policy before submitting your name, e-mail, address, or other credential on a website.

- Never Click on Save your password or Remember password while using social sites, apps or mail accounts.

So, don't be an easy target, do these easy basic practices, and help yourself and security community make life much more difficult for cybercriminals.

TANAHUN HYDROPOWER LIMITED

Tanahun Hydropower Limited was established as a subsidiary company of NEA to develop

140 MW Tanahun Hydropower Project (previously known as Upper Seti HEP).

The main features of the Project are :

Installed Capacity	: 140 MW
Annual Energy	: 585.7 GWh
Design Flow	: 131.2 m ³ /s
Dam Height / Type	: 140 m/concrete gravity
Headrace Tunnel	: 1162 m (7.4m dia)
Surge Shaft	: 61.5 m (ht.), 28 m (dia)
Penstock Pipe	: 650 m (l), 5.7 m to 4 m (dia)
Turbine	: Vertical Shaft Francis 2 nos
Powerhouse	: Underground Type
Transmission Line	: 36.9 km



CRYPTOCURRENCY - A DIGITAL CURRENCY

"Encrypted and backed up by Blockchain, the digital currency is not made with silver or gold, but with codes."



Sujan Kharel
Student of Industrial Engineering
3rd Semester, IOE Thapathali
Campus
s.kharel023@gmail.com



"Virtual currencies, perhaps most notably Bitcoin have captured the imagination of some, struck fear among others, and confused the heck out of the rest of us."

- Thomas Carper (US Senator)

Introduction

Cryptocurrency (Greek Kryptos - Hidden, secret) is a digital or virtual currency that uses cryptography for its security purpose and anti-counterfeiting measures. Not made of gold, platinum or any precious metal, Cryptocurrencies are also called digital, virtual, or alternative currency. In simple words; it is digital money created from code. It works through principle of blockchain (public transaction database) technology. Apparently, it is not any kind of coin or currency which we can hold in hand or stick in a piggy bank. Unlike video & mp3 files, Cryptocurrencies are not a string of data that can be duplicated. There is no any organization responsible for deciding when to make more currency, how much to produce or, keeping track of where they are or investigating fraud. Cryptocurrencies are somehow geeky and not

understood by most people, banks, government, and many of them are not aware of its importance. Cryptocurrency is an encrypted string of data or a hash, encoded to signify one unit of currency. A defining feature of Cryptocurrency and arguably its most endearing allure is its organic nature; it is not issued by any central authority, rendering it theoretically immune to government interference or manipulation. Cryptocurrencies are built on cryptography. They are not secured by people or by trust, but by math. The validity of each Cryptocurrency is provided by blockchain technology. **Thomas Carper (US Senator)** recently said, "Virtual currencies perhaps most notably Bitcoin have captured the imagination of some, struck fear among others, and confused the heck out of the rest of us."

**LEDGER - TRUST + CRYPTOGRAPHY
= CRYPTOCURRENCY**

History

Just like plastic, was unknowingly or accidentally produced by Leo Bakeland; few know that Cryptocurrencies also emerged as a side product of another invention. Satoshi Nakamoto, the unknown inventor of Bitcoin (The first and most used Cryptocurrency till date) never intended to invent the currency. To this day, no one knows who Satoshi Nakamoto is. In the nineties, there have been many attempts to create digital money, but none of them succeeded. After seeing the centralized attempts fail, Satoshi tried to build digital cash system without a central entity. This decision became the birth of Bitcoin. In his announcement of Bitcoin in late 2008, Satoshi said he developed "A peer-to-peer Electronic Cash System." Some of the popular Cryptocurrencies are:-

- Bitcoin
- Ripple
- Ethereum
- Cardano
- Litecoin
- Stellar

Cryptography

Cryptography is an indispensable tool for protecting information

in computer systems. Its dictionary meaning is "the art of writing or solving codes" which means cryptography is all about constructing and analyzing protocols which include disciplines of mathematics, computer science, electrical and communication science along with physics. Cryptography is a tremendous tool which is a basis for many security mechanisms. However, it is not the solution for all security problems and is not reliable unless appropriately implemented. David Kahn first published the book 'The Codebreakers-The Story of Secret Writing' in 1967 which is considered as an excellent chronicle history of cryptography. Cryptocurrency without cryptography would be like people keeping money without any security. Today use of cryptography is increasing day by day and is being used everywhere. Some of the most common fields are:

- Electronic Voting system
- Authentication
- Digital Signatures
- Crypto Systems
- Encrypting files
- Onion routing (Anonymous Communication)
- Digital Currency
- Private auction

Mechanism

Let's have a look at the mechanism ruling the databases of Cryptocurrencies. A Cryptocurrency like Bitcoin consists of a network of peers. Every peer has a record of the complete history of all the transaction and thus has the record of balance of every account. For any transactions to occur, it is broadcasted in the network and sent from one peer to every other peer. This is also called P2P (Peer-to-Peer) technology. This transaction is known

almost immediately by the whole network, but only after a specific amount of time, it gets confirmed.

After all, confirmation is a critical concept in Cryptocurrencies. All we need is confirmation of any transaction to occur. When a transaction is confirmed, it is set in stone. It is no longer forgeable, i.e., illegal copy can't be made to deceive. It is part of the permanent record of historical transaction: of the so-called Blockchain.

Blockchain

Business networks today are often inefficient because each participant in the system keeps individual records or a ledger of all transactions that are going on. This process is expensive because of duplication of effort and intermediaries adding cost of for their services. The only solution to this problem is Blockchain, which provides a shared ledger technology that allows any participants in the network to see the one system of record or a ledger. By using blockchain technology, businesses can benefit from a more efficient transfer of goods and services.

The blockchain is an incorruptible ledger of economic transactions and records that can be programmed as record-keeper not only just for financial transaction but virtually for everything of value. It can also be defined as digitized, decentralized, public ledger of all Cryptocurrency transaction. The most recent transactions are added to it in chronological order. It allows market participants to keep track of digital currency transactions without central record keeping. A block is a current part of blockchain, which records some or all of the recent transactions. Once completed, a block goes into blockchain as permanent database. There are countless such blocks in blockchain, connected to each other in proper linear, chronological order. Every

#	Name	Ticker	Last price	%	24 high	24 low	Price Charts 7d	24 volume	# Coins	Market cap
1	Bitcoin	BTC	\$ 7,198.641	+1.32%	\$ 7,278.785	\$ 6,636.660		\$ 4.48B	16.94M	\$ 121.97B
2	Ethereum	ETH	\$ 408.61731	+6.60%	\$ 410.97110	\$ 363.86633		\$ 1.73B	98.46M	\$ 40.23B
3	Eos	EOS	\$ 6.0557538	+3.14%	\$ 6.1512171	\$ 5.6756409		\$ 598.36M	1.00B	\$ 6.05B
4	Litecoin	LTC	\$ 123.43305	+8.28%	\$ 126.06460	\$ 108.82236		\$ 526.74M	55.85M	\$ 6.89B
5	BitcoinCash	BCH	\$ 751.54662	+5.90%	\$ 771.87498	\$ 676.71978		\$ 474.88M	16.67M	\$ 12.53B
6	Tron	TRX	\$ 0.04542342	+5.85%	\$ 0.04613541	\$ 0.03869500		\$ 457.79M	65.74B	\$ 2.98B

block is designed so as they can't be deleted and ensuring that data can be distributed, but not copied. Originally developed as the accounting method for the virtual currency Bitcoin, Blockchains which use distributed ledger technology are now appearing in a variety of commercial applications. The distributed database created by blockchain technology has a fundamentally different digital backbone which is also the endearing feature of blockchain technology.

Bitcoin

Bitcoin, A digital currency is an innovative payment network and a virtual currency which works without a central issuing body or regulatory body. Bitcoin is a first digital currency to use peer-to-



peer technology to facilitate instant payments and also first Cryptocurrency to capture public imagination. It was the first example of what we today call Cryptocurrencies, a growing asset class that shares some characteristics of a traditional currency, with verification based on cryptography. Bitcoins can be used to pay for things if both parties are willing.

Bitcoins aren't printed like dollar or rupee; they are

produced by a computer. Bitcoins are created by computers as a reward for a process known as **mining**. Bitcoin mining is the process through which Bitcoins are released to come into circulation. It involves solving a computationally difficult puzzle to discover a new block which is added to the blockchain, and reward is received in the form of Bitcoins. Mining is a record-keeping service. Miners get to do this as a reward for creating blocks of validated transaction and including them in blockchain. People all around the world compete to mine Bitcoins using computers to solve complex math puzzles. Roughly, currently, a winner is rewarded with 12.5 Bitcoins every 10 minutes.

International payments are easy and cheap because Bitcoins are not tied to any country or subject to regulation. No extra credit card fees are required thus Bitcoin is preferred by small business. Many individual feel more comfortable holding a part of their wealth in a securely stored Bitcoin where there is no any central authority that can block access or take a cut. Mostly Bitcoin is being used in money laundering although it is transparent and traceable. Most of the people also buy Bitcoin as an investment, hoping that they will go up in value.

Bitcoins are stored in digital wallet which may exist either in user's computer or cloud. Bitcoin uses public-key cryptography which includes public key and private key. A

wallet is a collection of these keys. As if we store money in wallet, Bitcoin wallet stores these key which is essence of transaction. The wallet is a kind of virtual bank account which allows users to send or receive Bitcoins, buy anything with it and perform various transactions.

There are about 16.7 million Bitcoins currently available. As said by Satoshi, with only 21 million Bitcoins that will ever exist, that means there are nearly 4.3 million Bitcoins left to mine. Think of it as Gold; the price keeps fluctuating; there is limited quantity on earth, some of it is mined, and some is yet to be.

TOP 10 WEBSITES FOR ONLINE COURSES



Coursera

Coursera has a huge diversity of subjects available from; everything from data science to musical theory. As Coursera is accessible to everyone, many of the courses are either free or very cheap to take, with only the official certification at the end having a higher cost indulged.



Engineering for Change Online Academy

The E4C Online Academy features webinar series including live webcasts every. Participants can earn a Professional Development Hour (PDH) for each webinar they complete



Udemy

In Udemy course subjects include literature, history, economics, social and political sciences, business management and others. The courses are light on engineering and technology, but there may be subjects of interest to small business owners.



Open Courseware Consortium

It is a vast network of hundreds of institutions worldwide, with courses in 20 languages. Its members include MIT, Tufts University and many others. There are dozens of subjects available, with admirable attention paid to studies in science, engineering and technology



Khan Academy

Khan Academy is a non-profit online platform providing a completely free library of educational “micro-lectures.” It has provided more than 3200 videos that famously make it easy to learn tough concepts. The offerings are heavy on math and science, including computer science.



Lynda.com

Lynda.com offers a subscription-based video tutorial library. Think of it as an education-based Netflix. Lynda.com membership provides unlimited access to more than 80,000 videos on a broad range of different subjects.



Codecademy

Codecademy is dedicated to teaching people how to code— and it's available for free. It motivates learners to keep a fast pace using supportive groups and a gamified points system. Courses on a number of languages—including PHP, Python and Ruby are offered here.



Autodesk Design Academy

It helps you unlock your creativity through free access to project-based learning modules and 3D design. It is authored by leading architects, engineers, artists, and animators.



UDACITY

Udacity

Udacity is a platform with a strong focus on technology, with a small but well-crafted selection of courses. If you're looking to break into data science (called the “sexiest job of the 21st century”), Udacity's data science program has an impressive roster of teachers from companies like Facebook.



YouTube EDU

Whether you're doing research for a project, need help with homework, or just want to learn something new, YouTube EDU features some of our most popular educational videos across YouTube.

Sources:

<https://www.engineeringforchange.org>

<https://www.upwork.com>

<https://academy.autodesk.com>

ENERGY AUDIT AND ITS NECESSITY

The benefits of saving energy and its costs



Romi Dangol
Industrial Engineering Student
7th Semester
meromi19b@gmail.com



*With great energy audit, comes a greatly reduced energy bill.
"Energy can neither be created but be saved can be saved." -
greenenergyaudits.com*

Energy Audit is the periodic examination of an energy system to evaluate whether energy is utilized efficiently or not. It is a systematic approach, performed for accomplishing an effective and efficient energy management program. Energy Audit typically includes data collection, plant surveys, system measurements including performance evaluation and data analysis followed by proper suitable recommendations and suggestions. It attempts to balance energy input with its consumption and reduces operational cost with its utility.

Types of Energy Audit

The type of Energy Audit performed primarily depends on types and function of industry and potential of cost reduction. Energy Audit can be classified into two categories.

- i) Preliminary Audit
- ii) Detailed Audit

Preliminary Audit

A preliminary energy audit can be defined as a relatively quick analysis to identify immediate improvement opportunities, identify areas for detailed measurement, and estimate scopes of saving. It uses existing, or easily obtainable data and is completed in around 3-4 days.

Detailed audit

A detailed audit is carried out in 3 phases: Pre-audit phase, audit phase, and post-audit phase. This type of audit offers the most accurate estimation of energy and cost savings. It considers the effects of all projects and, accounts for the energy use of all major equipment. It includes calculations for detailed energy cost saving.

Necessity of Energy Audit

The primary operating expenses of an industry is composed of energy,

labor, and material costs. If we analyze potential cost saving opportunities, energy emerges as a top one. Thus, energy management plays a significant role in cost reduction. Energy Audit provides the techniques for optimization of energy use and seeks methods for energy improvement to help minimize energy waste.

An Energy Audit creates a path towards a positive direction of energy cost reduction by the help of preventive maintenance, and quality control programs. It focuses on energy costs variation, energy supply reliability, and serviceability and identifies energy conservation areas.

The capacity of industries varies with its types and the functions it performs. The plant layout and machine used also differ with these factors. The common areas to be focused on industries for conducting an energy audit are as follows:

1. Ventilation

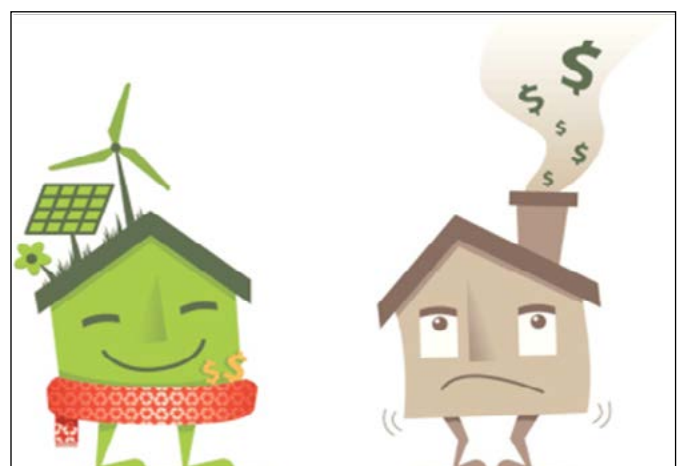
Ventilation is a crucial part of industries. Usually, the temperature of machine operating section is high; this creates an uncomfortable environment for workers. An energy audit suggests setting up a suitable working environment by installation of exhaust fans and windows (natural ventilation) in required areas.

2. Lightning

Working areas should contain favorable lighting. A dark room with excessive brightness creates an uncomfortable working condition. Energy audit suggests the best way lights should be placed and the optimum number of bulbs that should be present in each room.

3. Sound

The sound produced by machines creates irritation and, health problems among workers in addition to



deteriorating the overall efficiency. Energy audit suggests using sound-absorbing ceiling panels and materials to neutralize disturbances. It also considers further use of lubrication in-between machine parts.

4. Insulation

Industries use boilers, furnaces and large machinery in which heat can be dissipated due to leakage and other factors which should be examined and corrective action should be taken in time as they influence the efficiency of equipment.

A large-scale industry constitutes varieties of large machines. Thus, the energy consumption ratio is high as well. An energy audit is a must in these sectors, where some of the parameters observed during an audit are given as follows:

1. Air to fuel ratio

Fuel is considered as the backbone of the industry. A good fuel in proper ratio produces maximum effectiveness. If excess fuel is supplied then carbon monoxide (CO) is formed instead of Carbon dioxide (CO₂) and less amount of energy is released. If excessive air is supplied, a portion of heat generated is used to heat the excess air causing additional loss. The stoichiometric air required to burn unit amount of fuel is given below: Visual inspection of smoke helps in determining the fuel consumption ratio of an industry. Grey colored smoke indicates fuel is used in a proper amount; whitish color refers to the excessive supply of oxygen, and black color refers to inadequate supply of fuel and poor condition of machines.

2. Boiler

A boiler comprises of water feeding system, steam generation and collection, and fuel injection system. High quantity of heat is generated in the boiler. Thus maximum heat loss occurs there. To check heat radiation, auditor uses an infrared (IR) thermometer to calculate temperature on the surface of the boiler. Further stack loss, un-burnt loss, enthalpy loss, blow down loss are calculated by measuring fuel ratios, fuel burnt ratios, production of gases, etc. and auditor suggests insulation of boiler, improvement of feed water to overcome those losses.

3. Furnace

Heat loss in furnace occurs by incomplete combustion of fuel, heat loss through exhaust gases, furnace walls, and hearth, radiation through outer walls, cracks and, openings doors. Proper insulation, fuel ratio and, preventive maintenance can overcome the losses.

In the context of Nepal, Energy Audit is not considered as an essential part of industries. Conducting an energy audit is quite expensive. Its cost increases as the audit performed gets more detailed. Preliminary audit completes under 4-5 days while the detailed audit

is performed for around 20-25 or even 40-45 days. Large-scale industries conduct audits from time to time while small industry with limited investment and operating costs, don't consider it essential. Let us consider, an enterprise purchases a machine having a lifespan of 25 years. The machine performance degrades with time, and its efficiency decreases by losses such as corrosion and friction over a period after operation. If an audit is conducted on this machine, its serviceability and reliability increases and it can operate more than its specified lifetime, but our industries end up buying a new machine after poor performance of the machine or even selling the whole industry if they suffer loss.

Rather than going through economic deficit, industries should spend on audit and get the long-term benefit. With the utilization and optimization of the machinery and their operation through audit, industries can control and prevent any wastage in case of energy and economy. In conclusion, energy audit plays a vital role in economic sector and performance sector of the industry. It can help in increasing the profit and income.

Table : Air to Fuel Ratio

Fuel	kg of air/kg of coal
Lignite	8.5
Bituminous coal	10.7
Wood	5.7
Rice husk	4.5

References

Urban Property Services

<http://www.urbanpropertieservices.co.uk/landlord-advice/government-to-bring-in-energy-efficiency-improvements/>

Free Mass Energy Audits|MoonWorks

<http://www.moonworkshome.com/energy-audit/mass-energy-audit/>

VIRTUAL REALITY IN COMPUTER AIDED DESIGN AND MANUFACTURING



Er. Subodh Kumar Ghimire
Industrial Engineer,
Lecturer, Thapathali Campus
mesubodh@gmail.com



"Virtual reality is being developed as a pinnacle of luxury gaming kit. A simple version of same is what we seek for virtual reality in Computer Aided Design and Manufacturing) CAD/CAM."

Look around with an observant eye to witness that you are surrounded by nothing but data. Numbers that define your dimension in this Space coordinate, which is accompanied by another number set representing a time frame. If we try to perceive the computable reality as it is, this can very well be done by numbers. Henceforth our reality is merely a database of numbers that are filled with properties that again can be defined by another set of Database. A computer-aided design (CAD), basically manipulates the same database of geometry, the first type of database explained earlier. We then go a step further and introduce a second database under Computer Aided Engineering (CAE), basically playing with the functionality of the designed geometry. This can also be referred to as models. Unlike mathematical, physical models a Computer model has a brilliant present and an outstanding future, the future of Virtual Reality. The term virtual reality primarily means the ability to

"walk around" engaging senses in 3D (Three Dimensional) models and view them as though they tangibly existed in space. Some CAD models now can be viewed in virtual reality through the use of special viewing helmets or glasses, and software that formats video images to create the impression of depth. Just like how surround sound tricks the brain via ears to pinpoint sound source in space even though the source is just next to ears. The virtual reality we are talking tricks brain via eyes. Both eyes are separately fed with images with a slight variation of view that when combined within brain gives a single image with an impression of depth. Virtual reality is being developed as a pinnacle of luxury gaming kit. A simple version of same is what we seek for virtual reality in Computer Aided Design and Manufacturing) CAD/CAM. Design software with 3D handles is pretty common these days. The database consists of all the parameters required for complete 3D model development.

Including isometric, diametric, trimetric and perspective views to accommodate a 3D appearance in a 2D screen. They even pose capability to 'walk through' through the model, which again is basic definition of virtual reality. Hence we are already there, simple addition of virtual reality gears to make the walkthrough experience even better and realistic is the end of the first step in this regards. And further development opens a whole new chapter in Computer Aided Design.

Computer Numeric Control (CNC) Simulation Software completely copies a variety of CNC machines that can teach about all aspect of operating CNC machine without the burden of having a physical machine. If the view of the machine on the screen can be developed with signs of depth and can be given to eyes, which opens a new level for Computer Aided Manufacturing practice. Mostly ignored field when it comes to virtual reality in CAD/CAM is the area where designer includes oneself onto the design space and creates them. Virtual reality, in this case, is for the sake of designer's ease and realistic experience rather than mostly talked viewer's comfort. A designing experience that comprises of moving your

head around as input and to view the views of the project as if its right before one's eye makes it untiring, which unfortunately might not be same for the eyes.

Think and move experiments are done in the past on insect to control their movement. Where brain is the source of input in the system. To poke a hole in every designer's head so that he can design without tiring is not suggested but some advancement in probing technology has the key to a long-awaited think and design experience. This can indeed be the magic of neural technology in the field of design and manufacturing. It's a long way to go from what we currently have but still gives Goosebumps to think about. The current reality in the field of virtual reality applied CAD/CAM includes a variety from plastic surgeon to topology mapping and automobile showcasing. It's a magnificence of beautifully presenting ideas in augmented reality that helps in showcasing its latest offering in virtual reality environment before it even happens. The opportunity it explores when it comes to customer experience is immense. Not only the potential client can access the product or service to its full extent regardless of the geographical boundary, they also can mark modifications to fit their taste.

Implementation of virtual reality in Computer Aided Design and Manufacturing complicates the way design and manufacturing are done, but it simplifies when it comes to accurately matching a product with the requirement. It's as if everything is tailored to match each perfectly while maintaining the charm of mass production.

DEVISING A MANUAL STAIR CLIMBING WHEELCHAIR

A stair-climbing wheelchair making the disabled people independent



Er. Sarozh Maharjan
Mechanical Engineer
Thapathali Campus

Co authors: Ramesh Kumar Shrestha, Rupendra Aryal, Suman Shrestha



This idea of a project can be taken as a small effort towards humanity as it can create an easy, affordable and efficient stair-climbing wheelchair making the disabled people independent at some level.

Introduction

A chair with wheels designed as a replacement for walking is known as a wheelchair. A wheelchair has made remarkable improvements in living standards of physically disabled people as it has given them freedom for reaching wherever they may want. But there are some loopholes among which staircase is a major. In daily life, wheelchairs are seen rolling on roads, footpaths or any other plane surfaces, but rarely crawling on stairs. It has been one of the major problems to disabled or patients in locomotion on the surfaces of any standard stairs. This has brought the concept of such a wheelchair which provides locomotion on stairs as well. One of the basic problems faced by users of manual wheelchairs is overcoming architectural barriers like curbs and stairs on their way. Similarly, existing stair-climbing wheelchairs and their components are expensive due to electrification and complex mechanism. These major problems are in the favor of

the conditions of our country due to various factors such as low economic conditions, architectural barriers of a building, road infrastructures having curbs, etc. This has led us to design such a wheelchair in order to minimize or uproot such problems. This idea of a project can be taken as a small effort towards humanity as it can create an easy, affordable and efficient stair-climbing wheelchair making the disabled people independent at some level.

Objectives

The main objective of the project is to design, fabricate and test manual stair-climbing wheelchair with lever propulsion with specific objectives:

- To make mobility of disabled people easier.
- To adopt the design with existing wheelchair for stair-climbing.

Working Mechanisms

Planetary wheel mechanism is selected for the rear wheel with Tri-Star arrangement due

to its mechanism suitable for both stair climbing and leveled ground.

Tri-Star system is used due to following benefits:

- Appropriate for both ground plane and staircase
- Low fluctuation of wheel center, which aids stability and requires less pull force.

For maintaining stability (safety) on stairs, the position of CG should fluctuate within a minimum range, for which screw jack mechanism is arranged under the seat of the wheelchair.

In this design, the weight of the user is assumed 80kg can apply 180N pull force, assuming that degree elbow flexion is 150 degrees using drive lever length (l) = 0.8m.

Key findings/output

3 test subjects i.e., 2 boys and a girl of weight 21.6 kg, 30.3 kg and 25.3 kg respectively were called upon for test and the project finally concluded with the following:

- The project involved the use of existing Tri-Star arrangement with planetary gear mechanism and leveraged driving mechanisms, which is found to be suitable for leveled ground, inclined surfaces, and stair climbing purposes.

- The user (not disabled) of weight 60kg is able to climb himself up a single stepped stair of the rise and run of 160mm and 300mm without assistance.
- On the leveled ground, the wheelchair is slower than the existing wheelchairs due to lack of speed changing mechanism.
- Poor effectiveness is caused due to flaws in components and techniques used.

Potential Application

The major application of this prototype can be used as follows:

- Disabled on their own can travel small step on footpaths and architectural curbs.
- Large stairs can be overcome by this stair climbing wheelchair with certain assistance.

Challenges

- Person intended for this prototype may not be active (i.e. strength of arm of the person should be equivalent to that of a normal person).
- Stairs may not be according to standards everywhere.
- Research may not cover all possible ergonomic factors for this prototype.

CAREER PATH – EMPLOYMENT VS ENTREPRENEURSHIP



Suresh Sapkota
Principal
Everest International College
sureshsapkota@hotmail.com



Now it's your turn. Close your eyes, take a long breathe and visualize your present position to find out current career anchors.

Employees and entrepreneurs both play important role in the business community. It is a choice to become an employee or an entrepreneur. Choosing a career is a challenging task which requires a lot of research, passion and motivation. Many young people do not make career decisions; they just follow what comes by to them. Some people end up in careers they had not planned on, dedication and hard work can make them successful. While some other people are just lucky enough to know what they want to do and end up in satisfying careers. Various studies have shown mainly four general individual characteristics that influence people selecting their careers. They are:

- 1. Interests:** People choose their careers as per their interest area.
- 2. Self image:** A career is a reflection of one's self image.
- 3. Personality:** It includes personal orientation and need.

4. Social backgrounds: It includes education, socio economic status and parental influence.

Now it's your turn. Close your eyes, take a long breathe and visualize your present position to find out current career anchors. Every individual are different in self-perceived talents, attitudes, motives and values. Career anchors are difficult to predict because it is evolutionary and a result of a process of discovery. Here, you have a choice to go for a job to become a manager or look for an opportunity from the market, establish a business and become an entrepreneur. Before moving forward let me help you to understand what kind of person you are by explaining various career anchors.

a. Managerial competence: People with this drive seek more power, higher responsibility and managerial position.

b. Security: People with this anchor look for job security, decent income, good retirement package are the features of people with security anchor. They just do what is needed to maintain their job security.

c. Technical competence: These kinds of people make their career choices on technical or functional content of work.

d. Creativity: People with hunger to create their own fall on this group.

e. Autonomy: These people look for career which offers freedom of action and independence.

f. Dedication to a cause: People who focus their career with cause that they believe are important.

g. Pure challenge: These kinds of people accept challenges, novelty and variety.

h. Life style: People with this anchor, try to fit all parts of their life together – their personal, family and career goals.

If you are struggling to fit in any of above career anchors, ask yourself a question. Why do you work? If you work for money alone select a job. If

you work for power, security, and high responsibility – select a career. If you work for creativity, autonomy, pure challenge and feel that there is a reason and meaningful purpose to be in the world – select to be an entrepreneur.

Similarities between Employment and Entrepreneurship Value

Both entrepreneurship and employment are important for the economy as both create value. The aspect of business is to create value and both entrepreneur and employee create and deliver value. Entrepreneurs get profit and employee gets paid for value addition. This can be done by creating value in any transaction that may to the end customer, other business, other employees or government agencies.

The value is delivered differently by entrepreneurs and employees. Entrepreneurs make themselves valuable for whoever is their customer and employees make themselves valuable to their boss or company. If entrepreneurs cannot add value, they cannot run the business and they wouldn't be an entrepreneur. If employees cannot add value, they wouldn't be hired.

Learning Process

Learning is a continuous process. No matter what you are – a fresh graduate or an expert, you need to put effort to learn.

When you get a job, that may be because of your education, experience or specific skills. All these just don't come by, you need to learn somehow. Even if you choose to be an entrepreneur, you need to learn to tap the opportunity from the market, create new ideas, develop people and understand competitors. Thus, whichever path you choose, learning is necessary.

No matter what you decide to be in life, you need to start learning some skills and experience.

Communication Skills

How to manage people is more of art than science. There is no secret formula or set of rules which make

moving, ambitious, growing attitude and has courage to handle being in a position of discomfort.

The first statement is mainly for employment. You know all the steps about how to create comfort zone, even if you don't know you can find

passionate about your work, understand failure is the part of a game, willing to sacrifice time, money and effort, crave learning, not afraid to take risks, have high level of confidence and determined towards work, then you may be ready to be an entrepreneur.

Manager:

1. There are limits to how much you do by yourself. Being a manager you can be a part of a team and contribute to a group goal. As a manager you have more control over some of the project decisions. Beyond that you can enjoy being with employees and give sufficient time to the family.

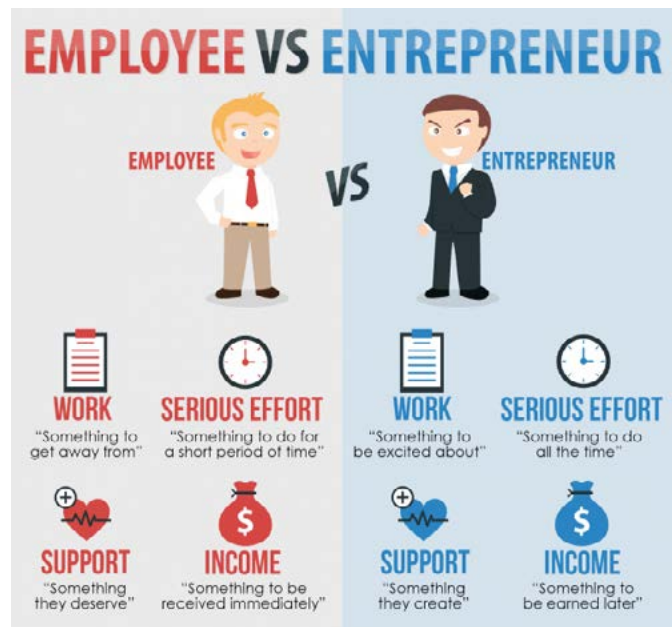
- **Ramesh Kumar Bhattarai**
CEO, Mhalaxmi Life Insurance Co. Ltd.

2. Being a manager I have liberty to promote or at least present positive light on people who have urge to perform and grow. It has more responsibility towards all the stakeholders and hence, increases our personal brand equity.

- **Gagan Mukhiya**
Country Head, DHL Nepal P. Ltd.

3. The best of being a manager is to develop my skills and knowledge, strengthen my business skills, earn good salary, increase responsibility and advance my career in the cost of company.

- **Sabitri Devkota**
Regional Advisor, Mary Stopes International



you a great communicator. No matter what you do, you need to be connected with people. Employees need to deal with difficult people at work, work in a team, express your plan and connect with customers. Likewise, entrepreneurs should possess communication skill to make connections. If you have been paying attention you would know how much connections are becoming more and more important in the present world. It is essential to understand that you might be social but it does not mean you are well connected. You might be super social but if you are giving off a wrong vibe, then professionals won't like you.

Pick one – employment or entrepreneurship

Every individual is different. Decide what kind of person you are and what kind of lifestyle you prefer. Let's discuss them separately.

- A person, who wants to be within comfort zone, wants stability in life and lives peacefully.
- A person who wants to stay

those. It gives you stability through job security. You will have a set schedule and can divert your mind from work to family. You will be working as per the terms of references (TOR) given to you.

The second statement is mainly related to entrepreneurship. Your mind is in various issues sacrifice social events and being with family and friends and even don't know when you will relax unless you plan. Despite this, you love what you are doing. You know what you are creating is yours. Life is unstable for you. You may sometime stuck in low or sometime in high. But still you love what you do. For you, ambition and dream are the two main drivers.

Which one is the best fit for you?

The answer is not in black or in white. It depends on many factors. There is no formula or theory which can guarantee you success. It depends up on how big are your dreams or goals. How hard you work to achieve them? If you are

In other hand, if you have specialized knowledge, want delegation of authority, want to work in formal and fairly rigid organizational structure with a team, naturally afraid to take risk, maintain status quo, then you may work as an employee.

Both employee and entrepreneur are necessary and equally important for the country. So, irrespective of your chosen field, you are valuable for your family, society and the country. Even you don't need to tag yourself as an employee or an entrepreneur to be happy in life. You just need to follow your passions and dreams.

What people say?

Entrepreneurship:

1. I think being an entrepreneur is great because possibilities are endless and I can create my own definition of success. I can work for myself and the betterment of the society.

- **Bishwa Chandra Ghimire**,
Director, Om Shakti Engineering P. Ltd.

2. The best part of being an entrepreneur to me is to observe all the knowledge I can from every aspects of my business, getting help from experts and watching ideas blossom.

- **Diwas Sapkota**
Partner and CEO, herchar.com

3. To start my own business has been empowering, challenging and exciting. I overcame all the difficulties to grow and it makes me feel great. I love what I do and looking forward how much I can grow myself both personally and professionally.

- **Deepika Sharma**
Partner, Arch Legal Services

INNOVATION TO DEVELOPMENT, SUSTAINABILITY AND PRODUCTIVITY IN CEMENT INDUSTRIES IN NEPAL



Er. Kushal Sharan Bhatta
Industrial Engineer at
Pharmapack Pvt. Ltd.
kushalurfren@gmail.com



It is expected that after some years, Nepal will be self-sufficient in Cement production. Most of the demand of cement in Nepal is being fulfilled by Indian companies.

Industrial engineering students are heavily benefited from field visit practices on various topics of engineering as per the course requirement. When I was in the 4th semester, my team did project on Study of Technology Used in the Manufacturing Process in Cement Industry. Definitely this field visit was a great experience; but some inquisitiveness like current innovation in the Cement industries of Nepal, how and why should cement industries innovate sustainable practice; essential drivers, steps and technologies kept me curious.

Sustained investment in infrastructure and innovation, the mass transportation and communication technology; and renewable energy are significant in growth of new industries. Industries are crucial driver of economic growth and development. Pragmatic leader is only a key enabler of innovation farseeing sustainable development in the country. In present Nepal, construction of business tower, shopping malls and houses are in the rapid

pace. Availability of the raw materials, cement production and its market is being important business.

Introduction:

Cement refers to material which acts as a binding substance; categorized as natural and artificial. Natural cement is manufactured by burning and crushing the natural cement stones. Artificial cement is manufactured by burning an intimate mixture of argillaceous and calcareous substances at high temperature. The burnt mixture of calcareous and argillaceous matter is known as clinker. Gypsum is added to delay the setting action of the cement for some time, so that, it may be properly mixed, applied and finished. Cement manufacturing from Limestone involves following main steps: Mining, Crushing, Raw meal grinding, Pyro- processing and cement grinding. Cement manufacturing from clinker involves the following main steps: Crushing, mixing, milling/grinding, weighing

and packing. Different types of cement are: Ordinary Portland Cement (OPC), Portland Pozzolona Cement (PPC), Portland Blast Furnace Slag Cement (PBFSC), White Cement, Specialized Cement, and Rapid Hardening Portland Cement

Current status:

At present around 59 cement industries in private sector have been registered in Department of Industry. It is estimated that annual gross consumption of cement in Nepal at present is around 2,500,000 MT. Annual increment of demand for cement in Nepal is considered to be around 20 percent. It is estimated that around six billion NPR of investment has been made by private entrepreneurs in cement sector. Couple of big cement industries of 900 to 1,500 tons per day based on rotary kiln technology are in pipe line and some of them will come into operation in few months. It is expected that after some years, Nepal will be self-sufficient in Cement production. Most of the demand of cement in Nepal is being fulfilled by Indian companies. Only 35% of the Nepalese market is occupied by Nepalese cement. Nepal is

blessed in cement production. Accord with proper research, investment, policy and local participation Nepal can be self-dependent in cement production in few years.

Main sources of energy used in Cement industries are electricity and coal. Coal is mainly used in the kilns for calcinations in limestone based units and in some cases also used for electricity generation in plants having co-generation system. Approximate share of electrical energy used in cement industries is 9 %; thermal energy amounts to 91 %. Major energy consuming section in Nepalese cement plants are:

Thermal equipment: Primary/ Secondary Crushing, Milling (Ball mills and roller mills), Homogenization, Calcinations, Grate cooling (clinker cooling), Fan Systems, Dust collection. Electrical equipment: Electrical Distribution transformer & Power systems, Electrical drives, Diesel Generating Sets, Compressors, Lighting system, Co-generation plant, Material handling equipment. The devices like RABH (Reverse air bag house) and ESP (Electrostatic Precipitator) are used for controlling air pollution.

Obstacles:

- Shortage of capital
- Power shortage and load shedding
- Location problem and defective method of transport
- Political instability
- Technological obsolescence
- Corruption and loose law and policy
- Cash management
- Inventories management and storage

Innovation:

The radical innovations in the future to address the key issues associated with sustainability factor in the industry like (1)resource productivity, (2) emission reduction, (3) ecological stewardship, (4) employee well-being, (5) community well-being, (7) regional development, and (8) shareholder value creation. Many process, product and management innovations will upgrade sustainability.

Examples of sustainable process changes:

- Enhanced methods for using waste and biomass fuels in kilns, including better ways to monitor air pollutant emissions from kilns.
- New kiln concepts, such as advanced fluidized bed combustion, lower temperature processes, or use of microwaves or plasma in the cement-making process.
- Co-production of cement and electricity, e.g., first burning coal to produce electricity and turn coal by-products (i.e., ash) into cement.
- Use of low-carbon; hydrogen-rich fuels for reducing CO₂ emission.

Product innovations aimed at sustainability include:

- Use of renewable and waste materials, such as fly ash, rice husk ash, and waste concrete components (e.g., by including super plasticizers)

- New pozzolanic additives (e.g., kaolin-montmorillonite-illite clays and palm oil fuel ash)
- Cement with increased reactivity or lower calcium content, such as Energetically Modified Cement (EMC); and cement with higher belite content
- Developing and marketing concretes with increase durability and/or strength (e.g., reactive powder concretes or other ultra-high-performance formulations), which potentially decrease the need to replace older structures, creating less waste for disposal and lower fuel use and emissions associated with clinker production.
- Testing and deploying methods to increase the longevity of existing concrete structures, e.g., using special coatings (such as those including polymer or magnesium- phosphate cements), or methods such as realkalization or osmosis; and electrolysis.
- Creating cement-like products produced through new processes (e.g., geopolymers, polymer concrete made from recycled PET resin, chemically bonded ceramics made from magnesium oxide and phosphate powders, cement made through polyvinyl alcohol polymerization)
- Developing inexpensive building products and techniques that use cement,

such as bamboo-cement structures; cement blocks or boards that combine cement with locally available, low-cost materials; and the safe use of lower quality cements or aggregates in appropriate applications

Examples of management/ business concept innovations that could foster sustainability include

- Developing new product delivery mechanisms in developing countries to fulfill the needs in poorer areas
- Selling structural guarantees for innovative concretes with improved performance
- Combining cement production with an energy and/or CO₂ management business
- Expanding the scope of the cement company to include waste management and resource extraction businesses

Technology updates to be made:

- Nanotechnology: Nanotechnology is the study of manipulating matter on an atomic and molecular scale. Generally a nanotechnology deal with structures sized 1to 100 nanometers in at least one dimension and involves developing materials or devices within that size. Nanotechnology has the potential to make construction faster, cheaper, safer and more varied.

• Computer aided resources analysis: A large number of cement plants in all global scenarios have adopted computer aided technique for determination of quality and quantities of different types of materials existing in the deposit, and to plan optimal utilization of the blending ability of different quality materials.

- Quality control: Quality control department maintains strict quality at each stage of the manufacturing process to ensure delivery of the best quality cement to the customer. Raw mix samples are analyzed through titrations, X-ray analyzers. Bomb Calorimeter is also used in knowing quality. There are other several Quality tests to be done at ending stage of cement manufacturing.

Adequate concern for proper management of working capital is vital. To make industry conscious about the need for better management; cement manufacturers should come together and learn more from seminars in which erudite from the finance, management and marketing present effective techniques. Similarly government and the investors should go thoroughly for the innovative management, sustainability, and productivity so that cement industries in Nepal can compete in world market.

THINGS TO KEEP IN MIND WHILE MAKING SALES



Ashutosh Tiwari
Former CEO
Sherpa Adventure Gear

One size doesn't fit all
when it comes to
marketing and
sales strategies.



"Your success as an entrepreneur depends on your ability to sell."

Your success as an entrepreneur depends on your ability to sell. But hardly any business school offers a class on sales. Many organizations offer training programs on sales that are about theories of sales, and not about the practice of sales. In the upcoming years, we're going to witness an enormous revolution in the field of marketing and marketplaces. The time is just ripe to become a marketplace entrepreneur. Having a sound plan and knowing the best methodologies are important, but you should put in lots of hard work to nurture your community and make it flourish. Below, we offer some not-really-original but sensibly practical tips on sales.

1. Never talk cost. Never talk price. Always talk to clients about value. Value to them. Value for them – when they buy and use your products and services.

2. Explain and re-explain value about how it makes the

client's lives better, or easier or more profitable.

3. Always quantify what your strengths: 5 years of experience, 5,000 customers served and so on.

4. Never leave a sales meeting without mutually agreeing what the next action step is.

5. While making sales, talk more about the client's and their issues, and less about you. Listen, ask questions, understand what on the client's mind, and help the clients explain what they are looking for.

6. When you make cold calls, the point is not to sell – but to have a meeting.

7. Selling and negotiations are different: First, sell. Then, negotiate discounts and so on.

8. Sales and marketing are different: Marketing brings/ attracts the client's to you; you then make the sale to the client's who come to you.

9. Ask your salespeople to deliver to forecast: when they do so, it means they are on top of their work.

10. Care about your client's. People interact with and buy from those who care. Always help and tell your client's even when there is no direct and immediate benefit to you.

11. Filling the void with your product- to distinguish yourself from the rest by spotting the gap, being able to see something you can provide which no one else does.

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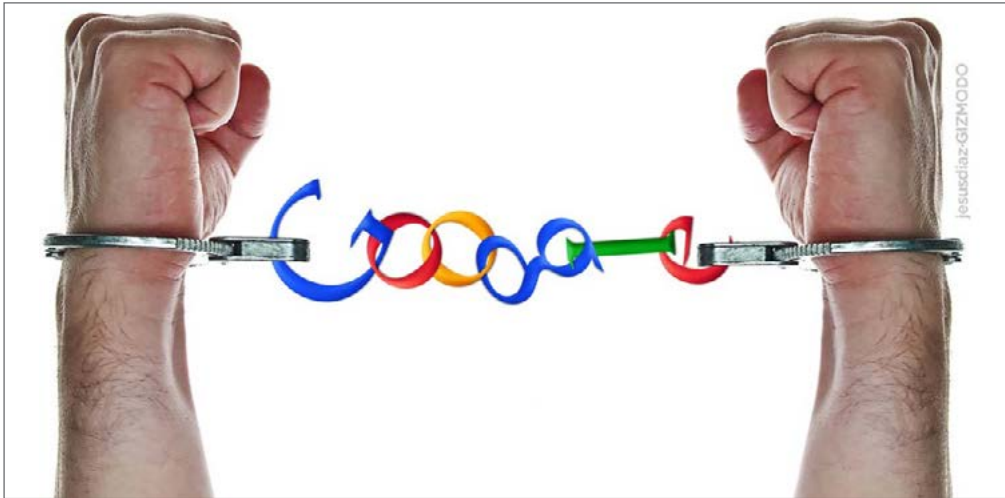
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Sabina Pokharel
Agriculture and Forestry University
Rampur, Chitwan
pokharelsabina58@gmail.com



"The number of Mobile phones and similar gadgets have exceeded the total population."

Any system, device or method which is the result of scientific knowledge is referred to as technology. In this 21st century, technology has progressed to an advanced level with groundbreaking discoveries. Even in a developing country like Nepal, Technology has occupied the people so much that internet penetration has reached 61% of the total population according to the latest Management and Information System report (2017) by Nepal Telecommunications Authority. Similarly, the number of Mobile phones and similar gadgets have exceeded the total population due to more than one subscription of Telecommunication services. Today, this advancement has been considered a fortune as well as a misfortune one for Nepal along with the rest of the world. Whether Technology is a boon or a curse has been a big debate among the young contemporary society of the world.

In a way, growing up in an age of technology is a boon to the children for they can

explore the entire world with it. Quantitative and qualitative advancements in the technologies have reformed the way of interaction, socialization, and behavior of modern day children. Children can learn in any way they want, and learning has been more fruitful with the wiser use of information technology. Technology has forfeited this younger generation by making the world available at their fingertips and facilitating them with endless possibilities to learn at their own pace. The younger generation has exposure to every facet of the socioeconomic lifestyle around the globe.

While on the other side, increasing use of technology has narrowed the growing and flourishing brains making them relied upon the internet for everything and finding their world within. Children are being detached from the natural environment which is their preliminary requirement for their intellectual, emotional, social, physical, moral and behavioral development. This technological bug is slowly and steadily infecting

Nepalese children too wherever accessible. They are gradually being occupied with the limitless choices for fun and entertainment rather than mingling with the family and nature. They have been confined into the maze of the screens. They are so lost in the world of screen that they don't even think about the actual physical world around them. Those days are gone when children spent their childhood running around the house, complaining about food and playing hangman, hide-and- seek or paper and pencil games. They no longer pay attention to the traditional rhymes of the nineteenth century sung by their grandmothers. The life of today's children has become verminous with this bug called technology across the globe.

Some assent and some dissent the use of technology and its ultimate effects on the childrens' psychology and intellectualism. While its true that technology has made things easier, the excessive use of technology among the young ones needs to be controlled. Its time for becoming responsible parents by being aware of the disadvantage of the excessive use of technology and maintaining boundaries between children and internet

surfing. Limited access to the internet and gadgets like mobile phones, tablets, laptops should be allowed with wiser guidance and supervision for productive learning activities. Let's not allow the trending gadgets to occupy young brain. They should go out to discover all the wonderful things and people rather than staring at the screens. Children should be more inclined toward nature for fostering their preliminary development in every aspect. By being close to nature and understanding the current status of nature deterioration globally, a sentiment for nature conservation can be triggered in their young brains like raw clay. We should mold them into future guardians of the Mother Nature rather than making them slaves to technology.

TECH

Trending Tech to Watch



Smart Home Assistants (Google Home/Amazon Alexa/Apple Home pod)

Google Home is a brand of intelligent speaker developed by Google. Google Home speakers enable users to speak voice commands to interact with services through Google's intelligent personal assistant called Google Assistant. It's also an intelligent home assistant, capable of handling everyday tasks and controlling your smart home. A large number of services both in-house and third-party services are integrated into Google Home, allowing users to speak voice commands to control interaction with them. Similar to Google Home, Alexa and Home pod are intelligent speakers for home assistant developed by amazon and Apple respectively.



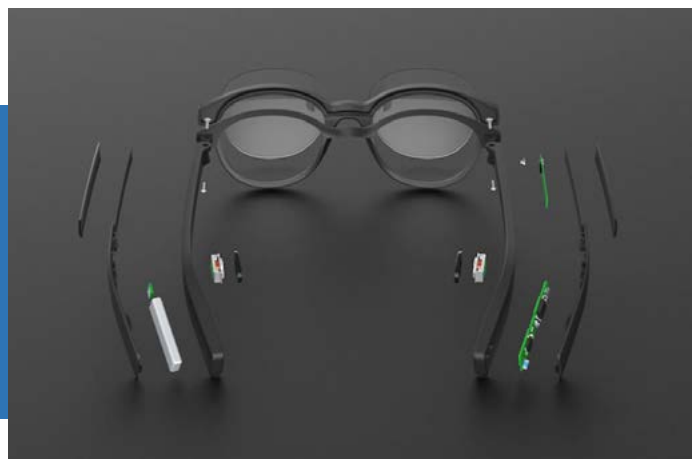
Falcon Heavy

Falcon Heavy is a partially reusable super heavy lift launch vehicle designed and manufactured by SpaceX. Falcon Heavy is the world's fourth-highest capacity rocket ever built, after Saturn V, Energia and N1, and the most powerful rocket in operation as of 2018.

SpaceX conducted Falcon Heavy's maiden launch on February 6, 2018, at 3:45 P.M. EST. The rocket carried a Tesla Roadster belonging to SpaceX founder Elon Musk as a dummy payload.

Vue Smart Glasses

Glasses can not only be to view but to listen and track your activity too. Vue Smart Glass can also transfer stereo sound to your inner ear the innovative bone conduction audio technology. This can eliminate the need to wear headphones, earphones or Bluetooth speakers for listening to music or making calls. Like secret agent, it is gestured controlled with gentle tap on right side of frame.



Tesla Roadster (2020)

Tesla Inc. has developed an all-electric battery powered sports car called "Tesla Roadster" which can accelerate 0-60 Mph (0-97 Km/h) in just 1.9 seconds and 0-100 Mph (0-161 Km/h) in 4.2 seconds. This quicker than any street legal production car. The quickest 0-60 Mph acceleration by street legal production car is set by Dodge Challenger SRT Demon, in 2.3 seconds. The vehicle has a 200 kWh (720 MJ) battery and torque of 10,000 N-m.

ARENA

Keep Your Eyes Open For These!!!



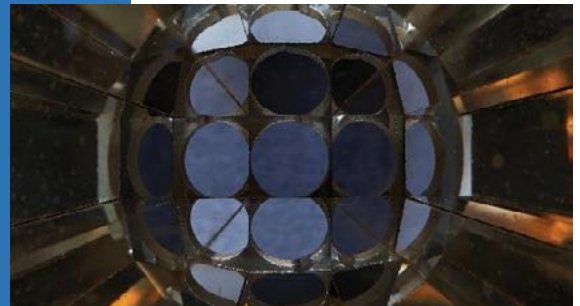
Sophia

"Artificial intelligence is a tool, not a threat." - Rodney Brooks

Sophia is a social humanoid robot, developed by Hanson Robotics, which is first robot to receive citizenship of any country. The robot became Saudi Arabian citizen in October 2017. Sophia is an evolving genius machine. Her human likeness, and remarkable story as an awakening robot time makes her fascinating. She is able to display more than 62 facial expression.

Hot Solar Cells

A team of MIT scientists has built a solar cells which is a solar power device that could theoretically double the efficiency of conventional solar cell. The new design could lead to inexpensive solar power that can keeps working even after sun sets. By converting heat to focused beams of light, a new solar device could create cheap and continuous power. The MIT device is still a crude prototype at just 6.8% efficiency – but with various enhancement it could be roughly twice efficient as conventional photovoltaic cells.



Jibo Robot

Jibo is the first social robot for home who looks, listens and learns. Jibo is designed to be a helpful, integrated part of your day-to-day life. We can ask him where the nearest coffee shop is, what the forecast is for tomorrow, or if your flight is running on time. Using facial recognition technology, it uses its camera to remember each person in loop. He uses six microphones to recognise voice and to detect where it is coming from. There is a touchscreen on Jibo's face which allow to communicate by touching.

James Webb Space Telescope

The James Webb Space Telescope (JWST) is a space telescope developed in coordination among NASA, the European Space Agency, and the Canadian space agency. It is scheduled to be launched in 2019 and will be located near Earth-Sun. The telescope will offer unprecedented resolution and sensitivity from the long-wavelength (orange to red) visible light through the mid-infrared range. JWST's capabilities will enable a broad range of investigations across the fields of astronomy and cosmology. One particular goal involves observing some of the most distant events and objects in the universe.



ARAIG (Haptic Suit)

ARAIG (As Real As It Gets) is a wearable device that provides haptic feedback to the body. Also known as tactile suit, gaming suit, it is a force-feedback and electrical muscle stimulation wearable device for use in video games. It can transfer sensation from virtual reality to human body through electric impulses.

NETWORK MARKETING

The richest people in the world look for and build networks, everyone else looks for work.



Sulav Shrestha

Student of Industrial Engineering
5th Semester, Thapathali Campus
sulavshrestha015@gmail.com



"Network marketing is the best way to multiply your wealth . It is a platform where you are paid for suggesting the company's product and service and sucessfully convincing customers to buy it."

While reading a particular book titled, 'Rich Dad, Poor Dad,' by Robert Kiyosaki, I encountered the following words: 'The richest people in the world look for and build networks, everyone else looks for work.' The term 'Network Marketing' crossed my mind which stands for a robust and scientific way of marketing goods and services in which independent-agents serve as distributors of products and services, and are encouraged to build and manage their own sales force by recruiting and training other independent agents. It is also known as multi-level marketing(MLM) and chain marketing. Irrespective of the name it is called, Network Marketing is a process used to promote the goods and services exponentially. It denotes expanding of the supply chain of products and services from manufacturers to the consumer through a non-salaried distributor. In this method, the commission is earned on the agent's own sales revenue, as well as on the sales revenue of the sales-force recruited by the agent and his or her recruits (called downline). In network marketing, there is no barrier in culture, people, races, creeds, sex, and age. It only requires continuous hard work and dedication to learning.

People should link others to the system, i.e., a company to

work in network marketing, and that corporation gives you a platform. The factors an individual should care before joining the network marketing are company creditability, product and service quality, plan profit and pay off and the way of delivery. Network marketing is the best way to multiply your wealth . It is a platform where you are paid for suggesting the company's product and service and sucessfully convincing customers to buy it. You earn a certain percentage of the commission for recommending.

Somebody once questioned Bill Gates, "What would you do if all your wealth is taken away?" Then, he replied that if all his wealth were taken, he would start his business with network marketing. Everything starts with a little one. An excellent oil magnate, Paul Getty once said, "I would rather have 1 percent of the efforts of 100 people than 100 percent of my own efforts". Similarly, in network marketing, people gather up to give their small effort which seems to be more critical when we take it wholly. People gather in a platform for sharing the ideas and thoughts to form a network. Once you enroll any employee in the company, you can't focus only on selling your product, you need to teach the newcomers how to imitate the system.

Continuing in such a way allows the company to grow in the short interval of time.

Network marketing is that place where your salary and payroll depends upon the hard work and continuous dedication on the job. Network marketing requires a small amount of investment for starting. The critical factor is time. We can use our free time or even work overtime. The market is open and has recurring revenue. Neither physical boundary nor political instability affects network marketing. It is a home based business for the proper utilization of time. Due to the pyramided scheme, the supply chain of the product is long, and there is a high chance of an increase in price about 60-80%. But network marketing creates the bridge between the manufacturer and the customers. It helps to build a warm relationship with the up lines and down lines. Although the idea of Network Marketing was introduced in Nepal a decade ago, in the last four years government had banned those companies due to a large number of scam and scandals which revealed corporations were cheating on millions of Nepalese consumers. Among

those companies, Unity Life International, Herbo International, Gold Quest International, Crystal Vision International, Best World Business Link and Robious International are few. Due to a ban on Network Marketing, about a dozen of companies have filed a written petition against the government decision. On March 28, 2012, apex court declared the Network Marketing as the illegal business due to the lack of proper law. Few year later, Supreme Court of Nepal has ordered the government to create an environment by regulating the rules of direct sales.

Further, for the prominent working of these companies, they should have proper plan and policies which should be registered with the Office of company registrar. Moreover, they should acquire a license from the Department of Commerce and Supplies. Recently, the parliament passed Direct Sales Networking Bill 2074 but still due to the internal law and dispute; the bill hasn't been implemented nationwide. Keeping those positive and negative impact of the Network Marketing in mind, Government should allow the business of multi-level marketing through the legal procedures and control the misuse and mishandling using proper documentation and verification. Network marketing vigorously will increase if we provide opportunities and when implemented using legal processes, it can be a boon for both the customers and corporations.

References:

1. <https://www.dreamstime.com/stock-image-orporate-hierarchy-network-marketing-pictograms-people-image34353301>
2. <http://www.networkmarketingrevolution.it/network-marketing-funziona-veramente/>

MIS AND ITS APPLICATION IN INDUSTRIES



Sajan Sthapit
Bachelors in Information
Management
8th Semester, NCCS



MIS professionals analyze business problems, design and maintain computer applications to solve the organization's problems. Managers; in organizations equipped with sufficient information; are able to form strategic plan, better decisions and transaction processing

Management Information System (MIS) focus on providing information with the use of computers and other intelligent devices for effective decision-making for managers. MIS supports the decision-making needs of executive, functional and operational level of management. Its focus is on the problem solving of an organization through the efficient use of information.

Information, the word that is most commonly used in every business. It's simply the facts provided or learned about something or someone. But in business, the growth and development depend on how effectively it uses the information.

"In the absence of information, we jump to the worst conclusions."

Information is the key to the success of the business. Information Technology (IT) has brought a rapid development in the field of business in last few decades. IT has changed the way we look at the world. Information Technology has improved the business efficiency, productivity, development and so on. It has also made a drastic change in the speed and accuracy in production of large volumes. In today's business, companies

are able to process, store and retrieve the huge amount of data at ever decreasing costs due to proper management of information system. Thus, Information Technology has become an integral part of the business.

The role of MIS in any business is like a heart in a human body. Here, like the human heart, MIS is responsible for supplying information to all the sectors of an organization. If the heart works faster the supply of information is easier. It regulates and controls all the information, processes it and sends to the destination in the quantity needed. It fulfills the need of information in an organization in normal courses as well as crisis. When the organization receives sufficient information the managers are able to form strategic planning, better decisions, transaction processing and so on. MIS provides a variety of pre-specified information (reports) and displays to management that can be used to help make more effective, structured types of operational decisions. MIS has its own importance at different levels of business organization:

1. At the executive level, MIS helps to formulate the end target, vision and mission

of an organization through strategic planning and decisions.

2. At the functional level, MIS is used for short-term planning, target settings and controlling the business functions.

3. And at the operational level, MIS provides the data to perform day-to-day or operational activities.

MIS professionals analyze business problems, design and maintain computer applications to solve the organization's problems. Managers; in organizations equipped with sufficient information; are able to form strategic plan, better decisions and transaction processing.

MIS is useful for both the manufacturing as well as service industry. The main intention of MIS is to satisfy customers and remain competitive in the industry as there is a tough competition in the market. Some of the major application of MIS in different industries are:

1. Human Resource Management (HRM)

Human resource is one of the key resources of the business organization. MIS in HRM deals with activities like attendance recording and employee calculations. It also plays an important role in maintaining employee records and generating appropriate reports. Similarly, organizations can recruit employees through online, just by announcing job vacancies in websites. The organization can also communicate with job applicants via e-mail.

2. Marketing

In today's competitive world it is essential for product to be recognized by every customer. Use of MIS in marketing helps the business to attract and serve potential customers.

Various activities such as promotion, advertisement, sales can be done through online which creates a customer-focused marketing. Let the customers view the product online including products features and cost and let them place the online order.

3. Finance

MIS supports business managers and professionals in making various decisions concerning the finance of the business and the allocation of financial resources within a business. The output includes accounting reports, cash flow forecast, operating and capital budgets and so on which eventually decreases the requirement of administration within the business. It further supports the business in making the decision for future activities.

4. Operations Management

MIS benefits the organization in simplifying and making the production process more automatic. The ongoing physical processes and actions of machines can be monitored using MIS. Since it is computerized database, MIS produces regular reports on operations for every level of management in a company. It also focuses on managing inventory, supply chain management, product and service design, and the integration of operations with strategic issues.

Thus, in the present world of competition among industries, in order to survive and grow, a business organization must have a properly planned, analyzed, designed and maintained MIS which provides accurate information at right time to enable the management to take decisions quickly.

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FIRE SUPPRESSION SYSTEM

Introduction, Need, Scope and Importance in the context of Nepal
How you can become a firefighting industrial engineer?



Er. Sunil Khadka
Industrial Engineer
Firefighting Analyzer
Mahalaxmi Engineering Works
sunilkhadka139@gmail.com



In Kathmandu valley, less than 50 fire fighters are serving the entire area with five antiquated trucks whose ladders reach ten stories. At the moment, only three firefighting vehicles are in full condition to operate smoothly.

Introduction:

Fire is an unforeseeable calamity; it can happen at any time and any place. At present, there has been a meteoric rise in the cases of fire in buildings and industries. The fire outbreaks are hugely catastrophic especially in context of Nepal. Due to the condition of congested roads in the country, an accidental fire could take hours to be contained which puts an increased risk of fire damage. The fire accidents are potentially hazardous for the industries and enterprises since they incur irreparable economic losses and jeopardise human life.

Statistics:

The statistics of the fire cases and its subsequent hazards in the country are intimidating. In June 2017, a fire outbreak in Yeti Carpet induced loss of Rs.1.5 billion. The huge loss incurred could be attributed to the time required to douse the fire which was approximately

8 hours. Recently, a fire in Balkhu obliterated 40 houses. Only last year, 246 cases of fire were recorded in the country, and this growing number is multiplying yearly. These daunting figures and fire damages can be the result of the lack of prompt response for fire control.

Yeti Carpet
1.5 billion loss
Kuleshwor
40 houses damaged
Last year
246 cases of fire registered

In Kathmandu valley, less than 50 fire fighters are serving the entire area with five antiquated trucks whose ladders reach ten stories. At the moment, only three firefighting vehicles are in full condition to operate smoothly. As a result, the response time to contain the fire casualties is uncertain. This data indicates that we can't possibly rely only

on firefighters to extinguish the fire.

"Prevention is better than cure"

Hence there is an urgent need for a systematic control of fire in the buildings and industries. This could be possible with the installation of a Fire Suppression system.

What is a Fire Suppression System?

Fire suppression system is a fire protection method used to suppress the fire using water supply system to suppress the fire and reduce the hazards of fire. In context of Nepal, the fire suppression system has become an important requisite to ensure maximum fire safety. However, pragmatic approaches and real life practices of the system are still rare. Till now, only few buildings and industries have felt the necessity of installation of fire suppression system.

Basic Equipment of Fire Suppression System:

Fire Sprinkler: It is a kind of smoke detector which has a nozzle attached to the pipes and installed to the ceiling of the building. Every sprinkler has a small glass bulb in it which blocks water. In case of fire, the air temperature above the fire rises, and the

glass expands due to heat. At last, the sprinkler melts and gets activated, oozing water to suppress the fire smokes before it can incinerate to large flames protecting the lives and property.



Fig: Fire Sprinkler

Fire Hydrant

A fire hydrant is a vertical steel pipe with an outlet as shown in the figure. It is the water reticulation system used to supply water to hydrant posts.

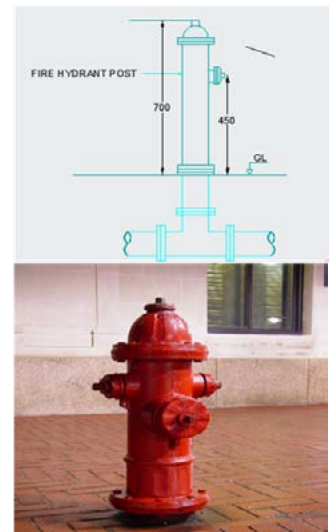


Fig: Fire hydrant system

or landing valves from the water tank using main pump.

Given the low number of firefighting vehicles in the country, fire fighters can use hydrants to cease the fire efficiently. In case of fire, the main pump operates, the jockey pump maintains pressure whereas diesel generated pump is used as a backup in case of no electricity.

In tall buildings, every floor needs to be designated with Fire Hydrant cabinet consisting of cylinder, RRL pipes. It will be more effective to mount the riser pipe from the base to the top so that if any fire is incinerated in the respective floor, it can be suppressed as soon as possible using FHC and sprinkler.

A typical layout of the complete fire suppression system for a particular site is given in the figure.

How Industrial engineers can serve in Firefighting sector/ Industrial Firefighting Engineer

An industrial engineer can enroll oneself in firefighting

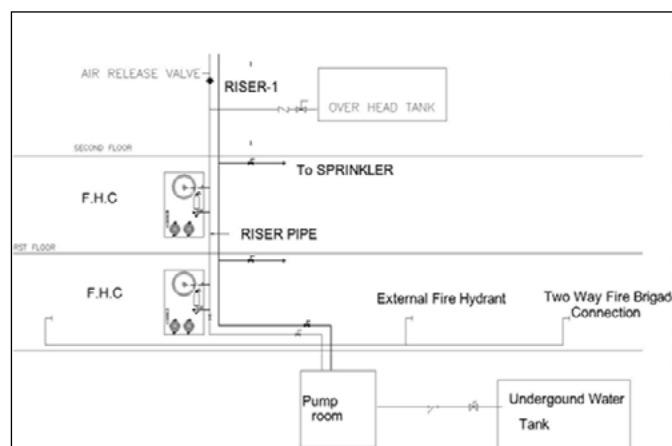


Fig: AutoCAD Layout of firefighting system

sector as a firefighting expert to ensure fire safety in the buildings and industries through proper monitoring of different equipment like alarm systems, fire sprinkler types and hydrants. The fire protection engineer uses new and existing technological developments and applications to provide improved fire safety. This task could range from their design to governing the site and maintenance works. In Nepalese industries, risk assessment is neglected, and industries are reluctant to the install fire suppression system. The firefighting engineer can initially scrutinize the potential fire hazards and quantify the subsequent losses to the industry or an enterprise to persuade the industries to install fire suppression system.

The engineer can prepare a risk assessment report and propose fire suppression measures to persuade the installation process.

Fire Risk Assessment that Industrial engineer can do in Industries/Buildings

Steps Fire Risk Assessment

1. Identify Fire Hazards

- Sources of ignition like cooking, naked flames, electrical etc.
- Sources of fuel
- Sources of Oxygen

2. Identify People at Risk

- People in and around the premise
- Workers, visitors, customers, persons with disabilities, infants.

3.

Evaluate, remove or reduce fire

- Evaluate the probability of fire occurring
- Evaluate the risk to people around the premises
- Remove the hazards that arise fire.
- Use fire preventive system like alarm, extinguishers

4. Record, plan, inform and train

- Record the measures and findings if any
- Prepare an emergency plan
- Conduct trainings and seminars
- Formally record the findings if 5 or more persons are employed, or if a license is in force under any enactment

5. Review assessment

- Review the fire-risk assessment regularly

- Update the assessment as required and inform the changes to the people.

Guidelines for every Firefighting Engineer to follow

In every tall building, it is mandatory to install a fire hydrant system under the supervision of industrial/mechanical engineer as per the Nepal National Building Code 1994. If industrial engineers are to be affiliated in the field of firefighting as firefighting experts, the basic guidelines and building codes for the installation should be known. The following guidelines should be followed by an engineer while analysing the firefighting site.

- As per National Building code, exit rooms and chimneys should be made with safer and better design for the people to escape out of the building safely in case of fire.
- In the context of Nepal, the tall buildings must have water tanks in the basement as the primary source of water. Engineers must oversee the installation and make sure that this water tank should be 1m over the pump room.

measures for protection like provision of open space, fire extinguishers, fire escape proper requirements etc. Engineer needs to oversee the site during the installation for proper safe working environment.

- The hydrants must be 36m far from each other and needs to be installed in the building periphery under the observation of industrial/mechanical engineer.
- Buildings and industries should do the periodic inspection of pump room, fire suppression system and replacement of fire extinguishers. Engineers must govern and approve the inspection of fire protection system.

Cost analysis of Fire Suppression System:

The fire suppression system installment comes with a cost, and the engineers should be familiarised with the financial implications of the fire prevention. An average cost analysis of installation of Fire Hydrant system in a particular site is presented in the table. Larger the area, larger is the cost of the firefighting system. Depending

Materials	Quantity	Total Cost(Rs.)
Fire pump (56KW)1	6,15,000	
Jockey Booster Pump	1	1,95,000
Diesel Generated Pump	1	3,00,000
Fire hydrant set (Landing valve, Hose pipe)	4,4	1,70,000
Butterfly valve	12	1,24,000
RRL PIPE	4	78,000
Fire Extinguishers(Foam and CO2)	7,7	1,89,000
Pipe lines and remaining expenses like FHC		10,00,000
Labor cost		4,00,000
	VAT (13%)	
	Total	34,70,230 (34 Lakhs)

- Important buildings like hospitals, industries should have standard

on the area and quantity, the price might range from Rs. 25 lakhs to more than one crore. The huge cost is the biggest

reason for the reluctance of the industries and buildings to install the fire suppression system. However, consideration should be given to the potential losses of lives and properties that an accidental fire could impose.

Which is more expensive? Installation cost of fire suppression system or the lives and property that can be saved

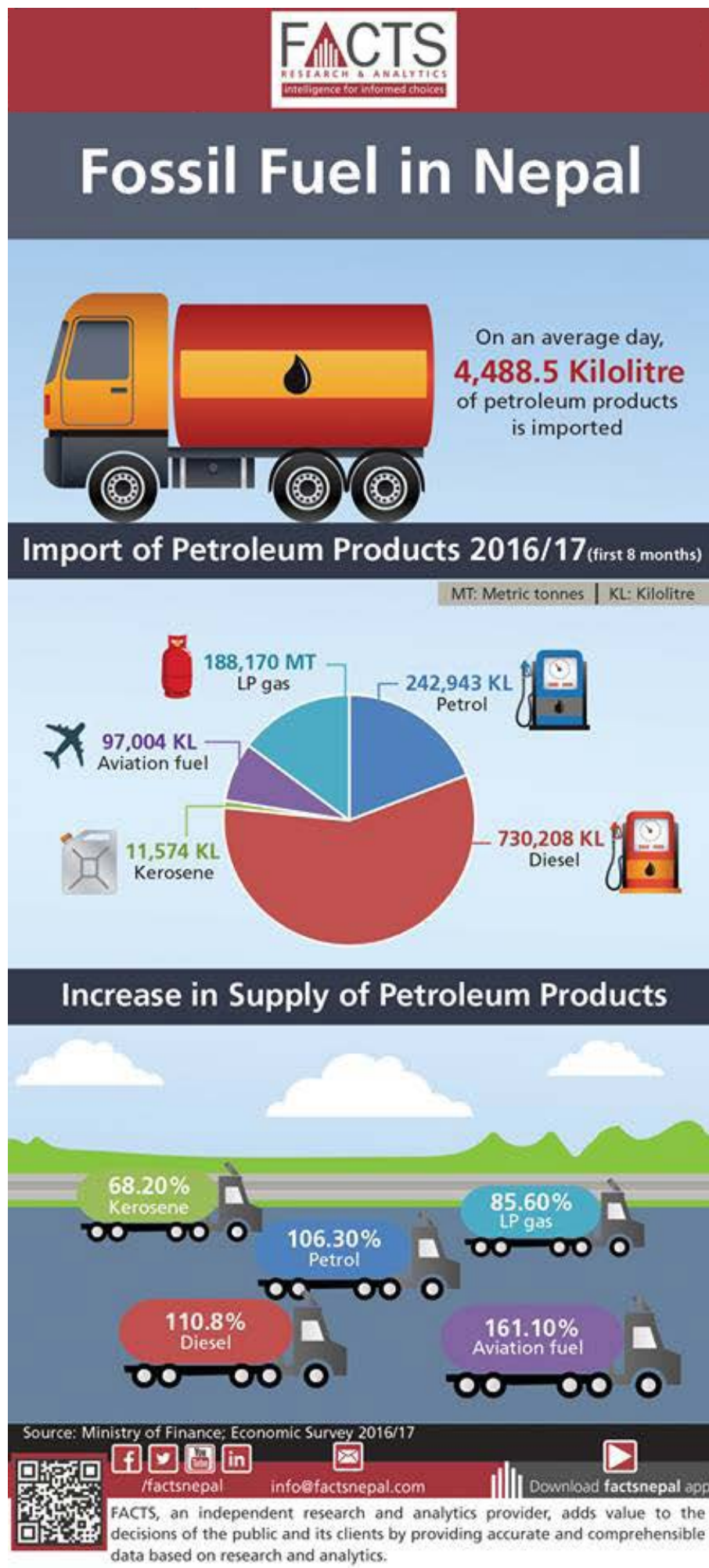
Choose wisely and encourage the installation of firefighting system in the tall buildings and industries in Nepal.

Emerging Fire Technologies

Different new modern technologies have been fabricated in the firefighting sector for better results. In foreign countries, water is being substituted with different alternatives like foam, powder etc. to douse the fire. This is because water takes longer period to cease the fire aroused by flammable liquids like petrol, diesel etc. Hence, modern hydrants are being re-equipped daily using these new sources of chemical agents. Not only that, innovations like deluge system, fire smoke detector etc. are being given higher priority nowadays. The firefighting engineers should also adopt these modern technologies for improved fire control and suppression.

Conclusion:

Fire suppression system bolsters the probability of safer domain by reducing the fire calamities and hazards. With the help of best fire safety equipment, the trending fire casualties in the country can be minimised engendering a secure surrounding for the people. Safety falls under the engineering ethics and code of practice and hence needs to be respected by every professional. Therefore, Industrial engineers should practice the principles for fire safety in the buildings and industries for improved risk minimisation and safer working environment.



WILL LINKEDIN REPLACE THE CV?



Many recruiters are now searching for potential candidates through LinkedIn and it will be increasingly used to find candidates. For now, LinkedIn should be used as a part of an integrated job seeking strategy; it provides much more flexibility in the way you present your information, you are not constrained by two pages and you can include additional content such as links presentations and videos.

If you are not found online, your application may not be taken further, do you want to take this risk?

To use LinkedIn effectively,

- Write in the first person, not the third, include insight into your personality and character, not just what you have done, emphasize key words and accomplishments.
- Include key words throughout your profile. For example, copy-writing or social media.
- Take account of your company confidentiality policy, and do not include any confidential details. If currently in work, do not tick the looking for job opportunities box, you will still be found. Do not make it obvious you are looking.
- Aim for five to eight recommendations but get as many as you can, it is far more effective to have other people write a recommendation than you talk about how good you are.
- Improve your visibility by asking questions, providing answers and joining relevant groups.
- Join groups related to your background and desired goal so you can identify relevant jobs.
- Include a link to your LinkedIn profile on your CV and e-mail signature to encourage people to find out more about you.

Source – The Guardian.

DISRUPTION IN LOGISTICS: KEY TRENDS FOR 2018

Technological overhaul on your organization's supply chain as a tool to keep up with major disruption in the logistics market

Amazon has achieved an outstanding market position, not least thanks to its revolutionary, fast delivery concept.



<https://managementevents.com/news/disruption-in-logistics-key-trends-for-2018>

Super-granular address systems, global collaborative networks and automated customs management are set to cause major disruption in the logistics market in 2018. In the world of same-day delivery, B2B and B2C customers alike expect their deliveries to arrive in the shortest possible time. Reliable track-and-trace and hassle-free handling of complaints or returns are taken for granted. As a result, companies need to embrace the latest technologies if they are to keep up. Here's a look at what's likely to change over the next 12 months – and how you can stay on top.

Super-Granular Address Systems

In 2018, we're also going to see the development of alternative geo-referencing systems such as what3words or Locpin. These divide the entire world into a closely meshed grid of coordinates. Each square is assigned a globally unique marking. Over the next three years, this method of address will become increasingly commonplace, adding a new dimension to the customer experience.

What3words, for example, uses a combination of three words to designate granular locations, and Locpin a code that can be supplemented with additional information for suppliers, such as details of the correct floor or a contact number. This allows safe access to destinations that are not covered by the classic address system of street, postal code, city, and country, and allows for more accurate targeting at major events like music festivals or in the event of a catastrophe.

However, the basic prerequisite for this is that the software is adopted throughout the entire supply chain in order to process the new data. As such, ERP and OMS systems must be able to accommodate the new solutions, as well as Warehouse and Transport Management Systems (WMS/TMS) and the entire complex of the accounting software.

In order for a shipment addressed with the new geo-referencing systems to easily pass through the supply chain, the conversion of all software systems in use must take place simultaneously. This is a major challenge for both software vendors and IT teams within the company. It can only be mastered with good planning and sufficient lead time.

The SME squeeze

Today, some companies are using their supply chain as a tool against competitors: Amazon has achieved an outstanding market position, not least thanks to its revolutionary, fast delivery concept. In the US, Walmart enforces just-in-time delivery with strict contractual penalties: Anyone who delivers to the stores too late or too early will be charged three percent of the value of the goods when the invoice is issued.

That means that smaller suppliers in particular are having difficulty keeping up with the competition, as it's hard to optimize your supply chain without the global heft of an Amazon or Walmart. To combat this, cooperative models like the global trade network system are an effective and useful way to keep up, placing smaller companies in a network of partnerships that can help them flexibly and quickly resource orders across the world on demand. These models allow rapid expansion of a company's own supply chain by including new suppliers as well as monitoring and controlling goods movements according to the control tower principle.

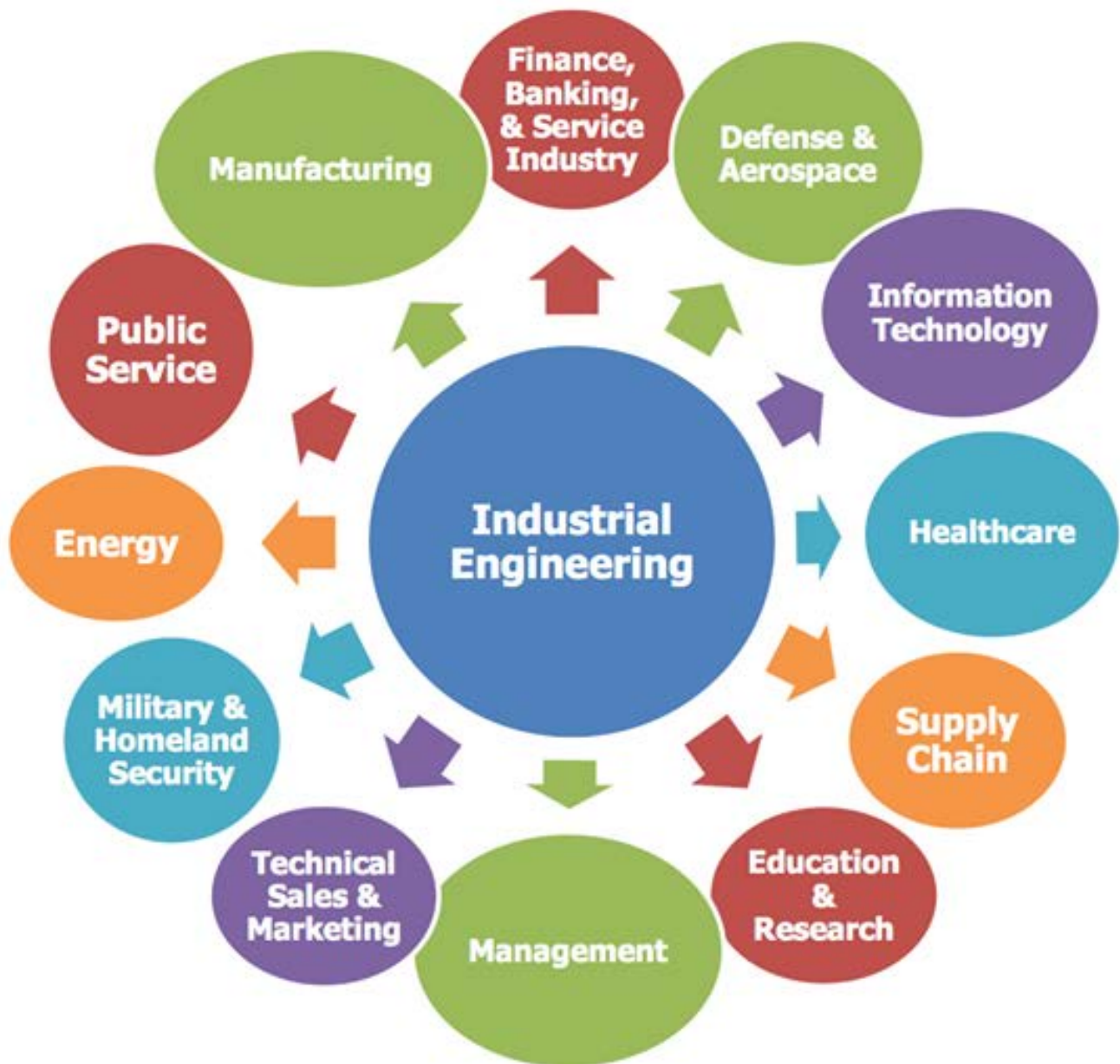
Brexit drives trend towards customs automation

With the UK's withdrawal from the EU, trade relations are undergoing radical change. In companies trading with the EU, the likely end of the free movement of goods will lead to a sharp increase in customs declarations for imports and exports. This entails considerable risks, including incorrect declarations and the threat of rapidly changing legal requirements.

Companies need to ensure that they have the right systems in place to cope. The new regime will require a quick transition of workflows and documentation. The sheer mass of customs declarations will also mean that increased process automation is a high priority for many logistics companies.

However, even the best software relies on competent users, meaning that Brexit has a direct impact on staff requirements in companies. Those who are strongly focused on trade with the European Union must ensure that enough customs specialists are hired in order to successfully implement complex export procedures in accordance with standards and regulations.

Industrial Engineering Employment Diagram



*This diagram shows areas of employment for graduates with bachelor's degrees in Industrial Engineering.
Tuning Texas, May 2011*

INTERVIEW WITH PANCHAKANYA GROUP



45 years ago, Panchakanya group was established as a modern rice mill, Panchakanya Rice Mill, in 1971, in Jhapa. Since its inception, the Panchakanya Group has been able to establish itself as one of the leading industrial and trading houses of Nepal and its activities include international trade, domestic supply, construction projects, and investment in financial institutions, hydropower project, schools, colleges, hospitals and construction related projects. Year after year the company launches various innovative products in Nepali Market for the first time.

What products have you been focusing on?

Sujane Shrestha: In 12 Baisakh 2072, Nepal was hit hardly by a destructive earthquake. During construction of a building, more mass of building means more inertial force which results in increased effect of earthquake. Panchakanya introduced internationally accepted Light Gauge Steel Framing (LGSF) structures in earthquake prone region like Nepal. I am involved in design, construction and development of LGSF structure.

Why should people select Panchakanya over other companies?

Bipsha Shakya: Fortunately, people choose us with trust and we have our valuable customers with a happy smile in their face. Further, we deliver by never compromising on quality and provide products at its best price. We believe on timely service. We work for customer satisfaction and the trust we have gained from our customers as a brand gives us an extra additional energy to work for our customers and yes, we value our customers.

What has the company been doing to survive in today's competitive market?

Sujane Shrestha: We primarily focus on quality and timely delivery for utmost customer satisfaction. We are pioneering in bringing new



products to the market. We believe in healthy competition and a fair market where customers can have a fair pick.

Q: What Corporate Social Responsibility (CSR) activities Panchakanya has been focusing on and what future plans are supposed to be implemented?

Sujane Shrestha: We generally go for CSR through annual programs but we also have immediate relief programs according to the need. We have been directly and indirectly involved in construction of schools, health posts, community projects, that can directly be useful for the local people. We try to contribute, if possible, by providing all the necessary cost, if not by providing certain amount along with the resources available within the company that can be used for construction. We have also been contributing in environmental and social

betterment.

Q: What measures are you applying to fill the gap between the old trend and the latest trends/technology used in the construction?

Bipsha Shakya: No doubt, Customer's feedback and post sales review help us to fill the gap between the old and the latest trends. We have imported the world's best technology for the first time in Nepal which has been an additional advantage to the construction market. Since more than 4 decades our company has been pioneering in the construction sector with a Slogan "Always first Always ahead." Keeping this into mind, we have introduced Panchakanya LGS to bridge between old and new trend.

Q: What major challenges have Panchakanya been facing recently?

Bipsha Shakya: For now our

major challenge is to make the entire customer and general people make understand the importance of earthquake resistive structure. Product awareness, providing them right consultation and completing the project within time despite of political disturbance and unstable market has been our major challenges.

Q: How are you following the digital marketing trend?

A: From the past 2-3 years, we are continuously upgrading the marketing style according to the trend. We are, through the digital marketing platform, providing information regarding our products to the customers. We are continuously upgrading our websites and making it more user/customer friendly.

Q: How would you define Panchakanya, as a workplace?

Sujane Shrestha: The Company has innovative and research oriented approach and emphasizes on personal growth of the staffs along with the organizational development. I have been working in the field of my interest here at Panchakanya. Overall, I enjoy my work.

Bipsha Shakya: Definitely, if you work in a field in which you have interest, you will enjoy your work. In my past 2 years in Panchakanya Group, even after being bound by corporate rules, I feel like we have freedom in workplace.

Higher management supports and motivates us. We get to explore many new things making work extremely pleasant.

Rohit Ranjan Singh: I haven't been around for years but I love the flexibility we have. The company encourages innovation and provides a platform for creative minds. RMC, LGS and various other products were introduced in Nepal by Panchakanya. I love how innovation is welcomed by the company.

Q: How is Panchakanya utilizing the Automation technique in its factories/ production houses?

Sujane Shrestha: We are switching towards the application of CNC machines in our manufacturing industries. From keeping inventory records to forecasting supply and demands, automation is utilized to its fullest.

Q. What are your roles in the enhancement of Panchakanya groups and its products?

Sujane Shrestha: Firstly, we have successfully established light gauge steel framing structure as latest construction technology in Nepal. I have made a significant contribution towards its advancement. We have completed numerous projects adopting this technology. Through our continuous innovation, research and development we have set a common goal to provide complete solution for the construction material under one roof.

Bipsa Shakya: As a sales and marketing person, customer satisfaction has always been my first priority. I try to understand the requirements of my customers and I assist them to select the best option among various alternatives and I am fortunate that our company offers a wide range

of construction materials that can easily fulfill all the requirements of a customer under a single roof.

Q. How can Panchakanya group and Industrial engineers collaborate for the country's Industrial development?

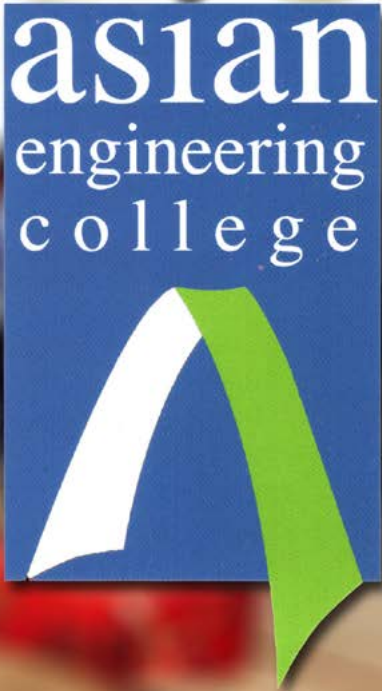
Sujane Shrestha: Collaborating with industrial engineers, we can optimize processes, operating systems and increase efficiency of our manufacturing units. Together with dedication and hard work, we could research to innovate new products as well as optimize existing processes.

Lastly, any message you would like to convey to the readers of Industrial Vision?

Sujane Shrestha: Don't just follow the trends. Know what you need and select from wide ranges of alternatives wisely without compromising quality.

Rohit Ranjan Singh: Don't always go with the cheapest option, quality matters.

Bipsa Shakya: We would like to thank our customers for trusting our quality and we would like to assure to provide best of our quality and services in near future as well.



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Hydro Electricity in Nepal



354 MW

Nepal Electricity Authority
(NEA)



227 MW

Privately owned
plants

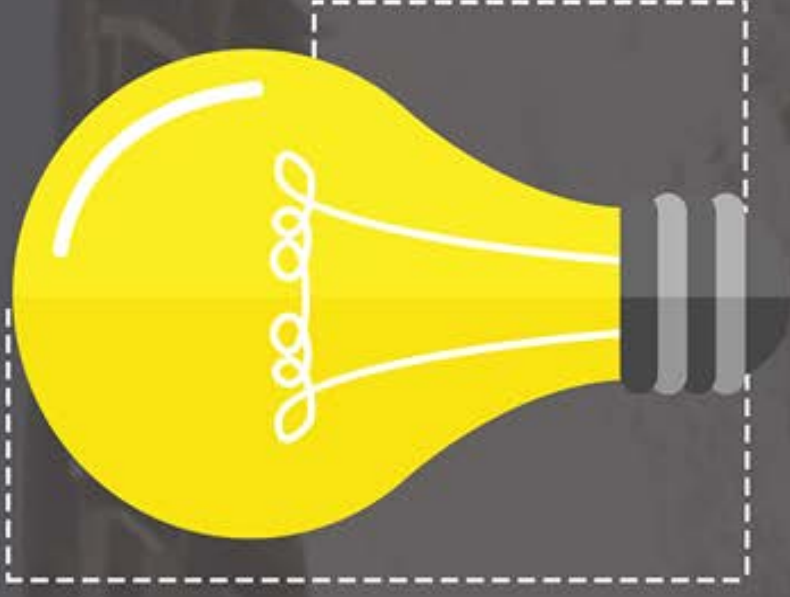


477 MW

Energy imports from
India

956 MW

Total capacity
of country's
hydropower
plants



581 MW

Total
production



Hitco Pvt. Ltd.

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(In Front of Kantipur Dental Hospital)
Maharajgunj, Kathmandu-44606, Nepal,
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