Issue 14/2024

The Engineering City Journal

Published by the Engineering Association *Yerevan, July 22, 2024*

The purpose of the Journal is to disseminate knowledge, experience, and best practice in engineering & manufacturing.
The articles are written by practicing professionals in the Engineering City (EC). They cover issues relevant to their projects, operations, and organizations.
The articles address the challenges of the time. As such, the Journal is also a chronicle of the evolution of the EC, its companies, and its individuals.
It is the aim of the Journal to advance the engineering & manufacturing practice, to enrich the engineering & manufacturing community, and to contribute to the worldwide discourse in engineering & manufacturing.

Table of Contents

ENGINEERING CITY CORNER 1
. The EC as a School for Engineering Professionals, Leaders, and Organizational Managers 1
ENGINEERING MANAGEMENT CORNER 2
. Some Aspects of the All-Round-People-Development Concept 2
SKILLS CORNER 5
. Critical Reading & Creative Reading 5
ART & ENGINEERING CORNER 6
. Artistic Expression of a Writer 6
MEDIA CORNER 7
. Interview with Bagrat Yengibaryan 7
EVENTS ANNOUNCEMENTS CORNER 8
. EC Meet-Up – Friday, July 26 8
. Art Talks – Monday July 22, Zoom Meeting @ 6PM 9
. Art Talks – Wednesday July 24, Zoom Meeting @ 5PM 9

Engineering City Corner

. The EC as a School for Engineering Professionals, Leaders, and Organizational Managers

by Rama, EA

The Mission of the Engineering Association could be formulated as:

"We aspire to revive the high-tech engineering industry in Armenia and take it to a new qualitative level.

We aim to raise a new generation of engineers who will serve as the foundation for the development and prosperity of Armenia in all vital sectors of the Armenian economy."

This demands that:

The Engineering City must turn into a school for:
developing Engineering Professionals,
upbringing Leaders,
and preparing organizational Managners.

Инженерный городок должен стать школой для:
Развития инженерных профессионалов,
Воспитания лидеров,
И подготовки руководителей.

Below, I will try to give a just a few points on each topic, knowing well that this requires a longer writing.

Engineering Professionalism means:

1. The knowledge of the fundamentals of science & engineering
2. The skills of applying the fundamentals on concrete problems
3. The knowledge of the guiding principles of engineering practice

Leadership means:

1. The trait of taking initiatives and making them happen
2. Drive the climb on the S-curves
3. Strive to be a role model for others by own behavior

Organizational Management means:

1. The knowledge of organizational fundamentals
2. The practice of organizational fundamentals
3. The knowledge of the organizational guiding principles

You can also read this article on Telegram. Link.

Engineering Management Corner

. Some Aspects of the All-Round-People-Development Concept

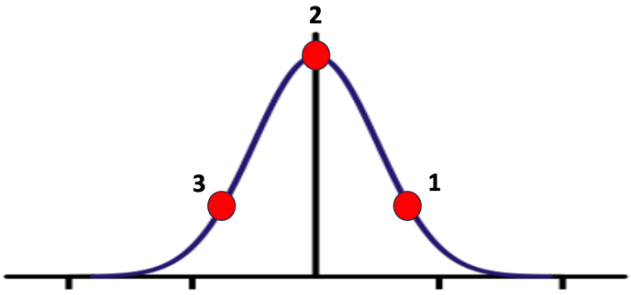
by Rama, EA

What does the all-round development mean?

It means that every person must be able to take different roles within a project and withing the organization.

This does not mean that everyone must be a master in every role. It is understood that each person is very good at some particular role. But, nevertheless, he must be able to play different roles in whatever degree he can.

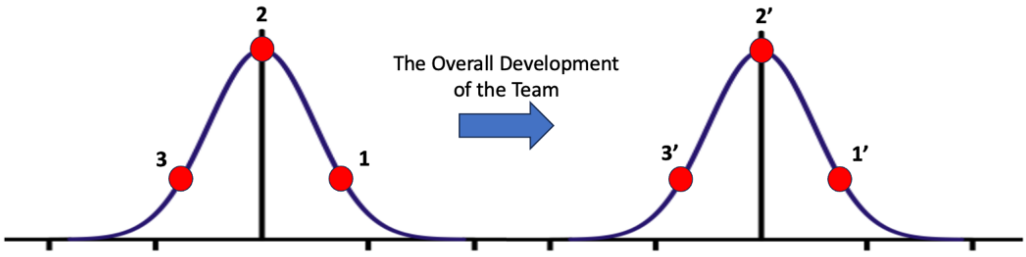
The quality of work in every role is usually distributed by a Gaussian distribution.



As per the Gaussian distribution, some people will be excellent in that particular role (1), some people will be average (2), and some people will be on the lower end (3). But everyone is, nevertheless, licensed to play this role.

We can bring an analogy of automobile drivers. All drivers are licensed to drive, but there are drivers who are excellent drivers, some are average drivers, and some are on the lower end of driving. Nevertheless, all are licensed to drive, and you can meet all types on the road. This is normal.

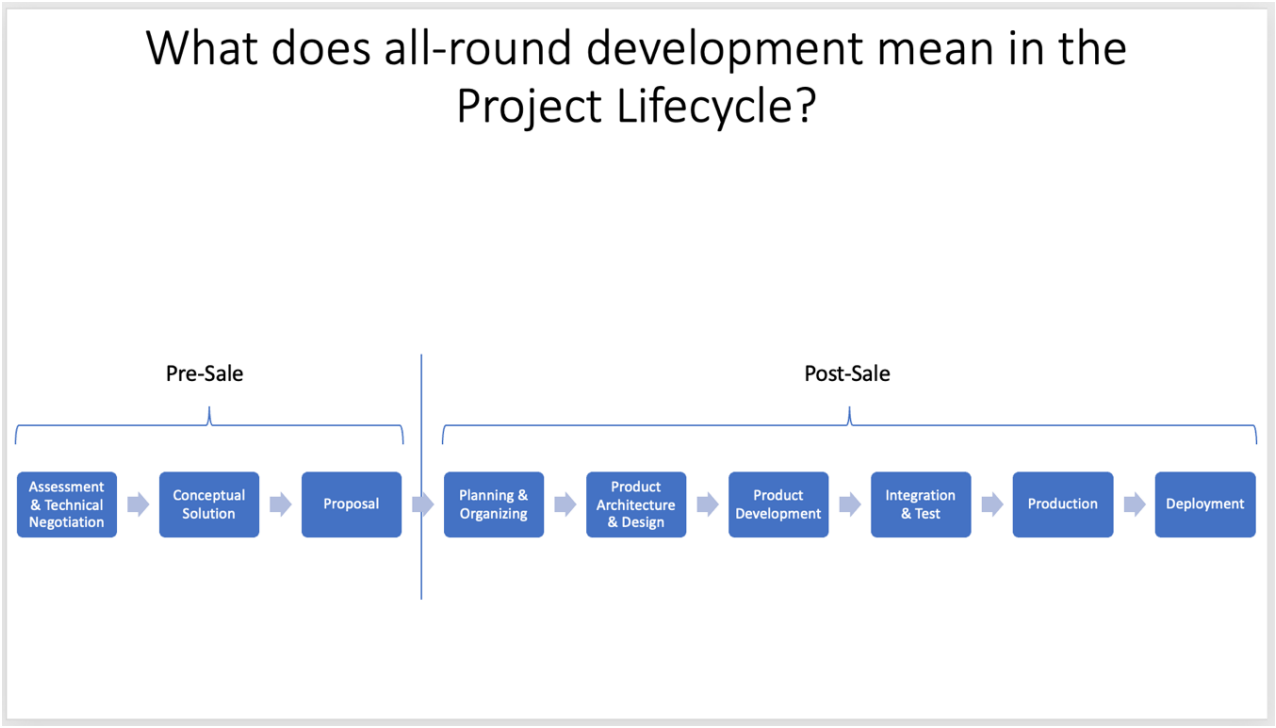
With time, the whole team starts performing the role in a better way and the curve shifts to the right (second Gaussian curve in the below picture). The excellent performer (1) becomes (1'), the average performer (2) becomes (2'), and the lower performer (3) becomes (3'). Nevertheless, you will again see a Gaussian distribution between excellent, average, and lower end – albeit now all are better than before. Also note that the (3') on the second curve is now better than the (1) in the former curve. This is because the team is growing together.



What I want to say that it is ok if we are a (1) in a certain role, yet a (3) in another role. The important thing is to play all roles and develop in playing all roles.

Below are some examples of different roles and skills.

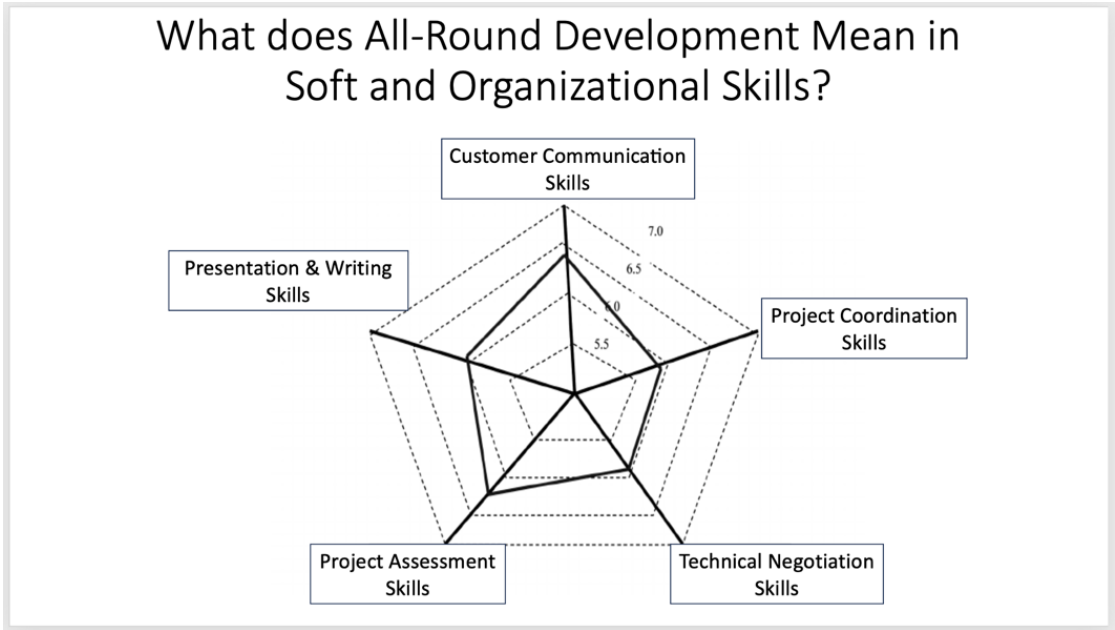
In the below picture we see the different phases in the project lifecycle. The all-round development in this case means that each person must be able to work in all the different phases of the project development lifecycle.



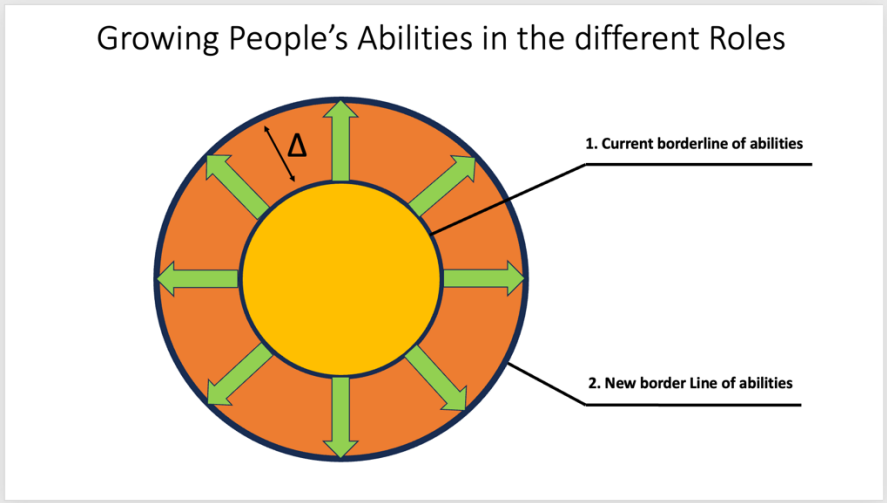
From this project lifecycle we can identify the below roles. The all-round development supposes that every person has the ability of playing different roles in different projects.

Project Roles
Long-Term View Team
Product Owner
Customer Owner
Pre-Sales Teams
Project Assessment Team
Research & POC Team
Proposal Writing Team
Project Leadership Team
Applications Engineer
Systems Engineer
Project Coordinator
Consultant
Design Team
Developers Team
Test Team
Other
Usability Engineer
Safety Engineer
Delivery & Deployment Team
Project-Specific Trainings Coordinator
Technology Trainings
Project Specific Trainings
Application Specific Trainings

Another example would be the different soft skills and organizational skills. In the below spider-chart I put a few such skills. On the spider-chart, every person can also identify the level of his proficiency for every skill. Again, it is ok to be better or worse in a particular skill as long as we practice them all.



And finally, would like to mention that for us to grow in the different roles, the tasks should always a slightly more than our current abilities. Growth happens if there is this difference (the delta Δ) between the current ability border line and the new border line.



This article could be also read on Telegram. Link.

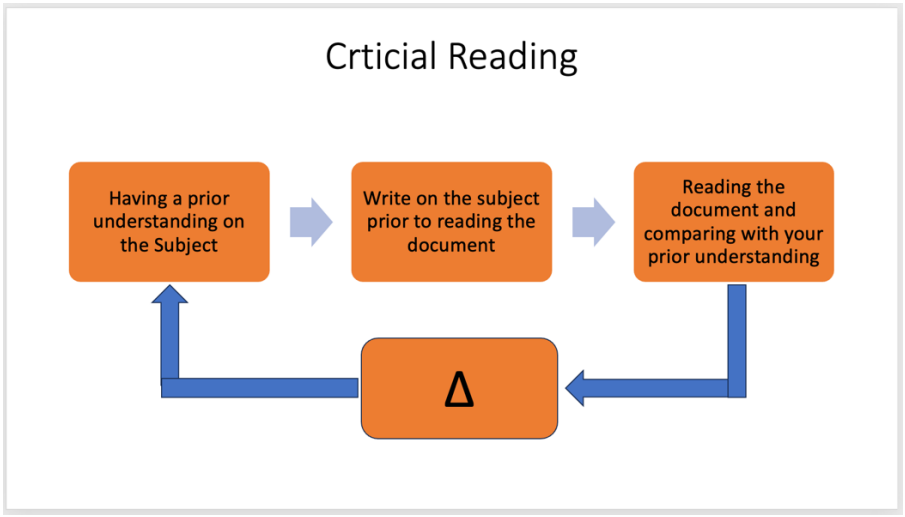
Skills Corner

. Critical Reading & Creative Reading

by Rama, EA

Reading critically means to have a prior understanding or opinion on the subject first, and then, as you are reading the document you compare what you are reading with your prior understanding of the subject. If you don't have a prior understanding or a prior opinion on the subject, then you cannot read critically. It is having this delta (Δ) between your prior understanding and the opinion of the author what makes the reading a critical reading. And it is formulating this Δ that is very potent. Because it either proves to you that you were right and the author is wrong, or that he is right and you are wrong, or you modify some of your understanding but not fully and you get into a constructive debate with the author, or you enrich your understanding. This way you will get most of the reading, you will easily memorize the essentials of the document, and you will proactively participate with the writer of the document.

The best way for this purpose is to write on the subject yourself prior to reading the text.

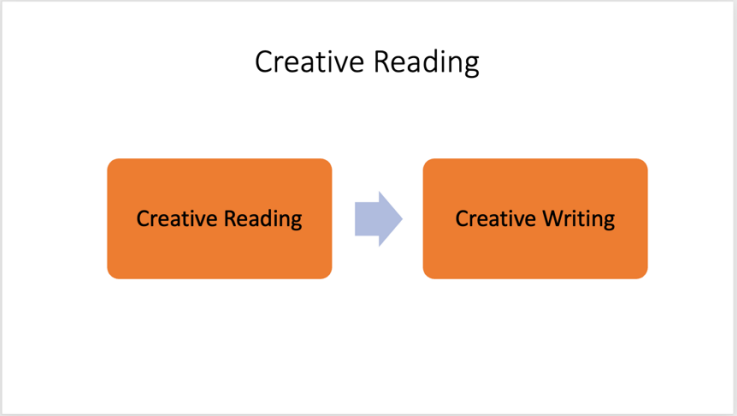


Take for example this article that you are reading now. The title says that it is about Critical Reading and Creative Reading. It is best not to read the article right away. It is best to formulate your understanding about this topic before reading it, then read this article. You will get a Δ out of it. That Δ will be what you have gained. That Δ could be small or could be big. And best of all, you may write a counter article on the same topic for the next edition of the Journal, and the Journal becomes a public discussion place.

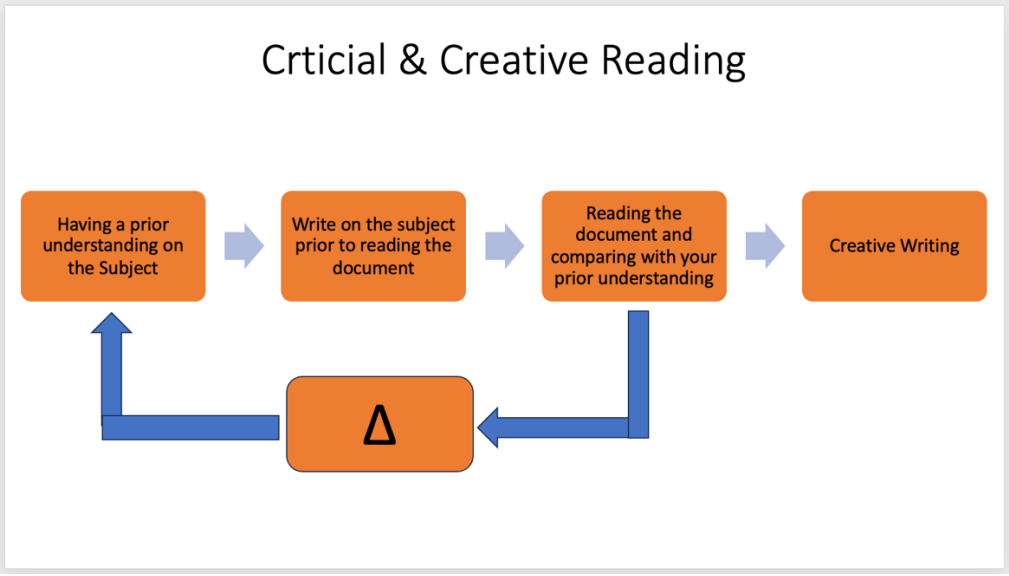
The same could be done with lectures and presentations. It is much better to formulate an opinion about the lecture topic and write a short write up about the subject before going to the lecture. That way, listening to the lecture does not turn to just an exercise of curiosity, but a debate with the lecturer. This will result in the enrichment of the topic both for you, the lecturer, and the audience at large.

Now let's move to Creative Reading.

Reading creatively is about closing the document that you are reading and re-writing it from scratch adding your thoughts on the subject. It is about allowing your mind to veer off to other thoughts, new thoughts - other than what is in the text, as such making your writing an original document produced by you. The point here is not to write what you have read, not to summarize what you have read, but to veer off and write a new document about the topic on your own. This new document will be your document. So, here, creative reading produces creative writing.



When we put both together we get the below picture. And this would be the most effective and productive reading.



You can also read this article on Telegram. Link.

Art & Engineering Corner

. Artistic Expression of a Writer



Young Pushkin in the process of writing.

You can find this picture also on Telegram. Link.

Media Corner

. Interview with Bagrat Yengibaryan

Interview with Bagrat Yengibaryan, EIF, on News.am
Link

The IT landscape in Armenia has undergone significant changes over the past year, with a number of new research and educational initiatives launched and new companies opening. In addition, active work is underway to build an Engineering City and negotiations are underway to build a future Industrial City. Bagrat Yengibaryan, director of the **Enterprise Incubator Foundation (EIF)**, said in an interview with NEWS.am Tech.

According to him, a new initiative called the Center for Advanced Research was recently launched in Armenia, where, among other things, they will work on chip (semiconductor) design and manufacturing concepts. Research labs were also opened in five areas, including cybersecurity, driverless cars, and smart manufacturing.

“We have already started research projects on possible technologies that will appear in 30 years,” Yengibaryan noted.

He also attributes the opening and launch of the Charles Aznavour National Supercomputer Center of Armenia in the Engineering City to the achievements of recent months, which creates the latest infrastructure that makes it possible to conduct research and calculations in the fields of industry, education and science. In general, the number of buildings and structures in the Engineering City, according to Yengibaryan, is growing at a tremendous speed.

As for the Industrial City, where it will be possible to organize production within the framework of projects developed in the Engineering City, negotiations are currently underway with the government and various donors. In addition to other issues, there is also the problem of the land plot that will need to be acquired next to the Engineering City.

Development of technologies in regions

As part of the **Silicon Mountains Shirak** technology summit, Bagrat Yengibaryan took part in a discussion dedicated to the topic of investments in the regions.

Talking to NEWS.am Tech, he noted that, given the limited resources of our country, he believes that regional development is one of the most important tasks. However, how to do this is a rather complex issue that needs to be figured out.

"Our regions are very different. For example, Ashtarak and Kapan are very different cities. Kapan, for example, is located on the border, and there are security issues there. In order to understand how to develop regions, we must first understand what prospects and financial opportunities they have. In particular, we are discussing the possibility of creating a technology center in Kapan. Considering the experience of Gyumri and Vanadzor, I am sure that we will definitely succeed in Kapan," Yengibaryan noted.

The decision-making process about where and what to develop must, he says, be based on a deep understanding of local needs, opportunities and interests. Initiatives based on competent partnerships have been the most successful over the past 20 years.

Speaking about the current opportunities for education and employment in the regions of Armenia, the EIF Director noted that in the post-COVID period, these opportunities have actually increased, as many have switched to online learning and remote work. This transformation has changed the form of education and employment, allowing for significant learning outcomes in a shorter time, including through the use of artificial intelligence. The role of teachers has also changed - from people transmitting information, they have become moderators.

According to Yengibaryan, all opportunities are being created to ensure that young people have to come to Yerevan to study or work as little as possible – they should have access to up-to-date information and resources in their hometowns, and they should have the opportunity to enjoy a higher quality of life in their regions while working remotely.

The Silicon Mountains Shirak forum was held on July 4 in Gyumri. The event was organized by UEICT with the support of the Ministry of High-Tech Industry of Armenia. The Platinum Partner of the forum is Unicomp, the Fintech Partner is EasyPay, the Tech Partner is Ucom, the Silver Partners are Synopsys Armenia and Ovio. Regional and Youth Representation Partner is the Gyumri Technology Center implemented by the Enterprise Incubator Foundation, and the media partner is NEWS.am Tech.

The interview in Armenian can be found here.

Events Announcements Corner

. EC Meet-Up – Friday, July 26

by Paramdzem Vanoyan, NIY

Exciting news!

Our EC Meet Up series is making a comeback.

After its successful launch last year, we are now returning in 2024 with our first meeting scheduled for July 26th.

Understanding the importance of these gatherings, we're reintroducing them with specific goals in mind:

- Fostering relationships with fellow community members and championing shared values.
- Coming together for educational workshops and cultural events.
- Partnering with existing organizations, engaging in public initiatives, and contributing to community needs.

Our meeting will consist of two parts: a Workshop and a Concert.

While we're finalizing the workshop details, I'm happy to share that concert segment will feature performances by NI Yerevan band.

Moreover, we're seeking talented musicians from the EC community to join us in collaborating with our team, contributing to the concert plan, and sharing the stage with NI Yerevan Band😊

Your active involvement and participation are vital for the success of this event.

Please take this opportunity to join the Band by reaching out directly to Babken (Babken.hovhannisyan.96@gmail.com, Tel. 096 711 996), or to Vehanush (vehanushkhachyan@gmail.com).

Rehearsals for the concert will start on week of June 24th latest. We would be happy to welcome you to the Band team!

Looking forward to reconnecting with all of you soon!

Telegram Link

. Art Talks – Monday July 22, Zoom Meeting @ 6PM

Lecturer: Philip Avetisov

Description: Collaboration Possibilities between Artists & Engineers

Venue: Zoom Link

This message has been also posted on Telegram. Link.

. Art Talks – Wednesday July 24, Zoom Meeting @ 5PM

Lecturer: Alexandra Dementieva

Description: How does the artist think.

About Alexandra:

https://alexdementieva.org/

https://youtu.be/OABQTVxYj6I?si=yd1SreJdtZqYkCCu

Venue: Zoom Link

This message has been also posted on Telegram. Link.

© 2024 The Authors of the articles

All materials contained in *The Engineering City Journal* may be used with reference to the Authors.

For feedback on the *Journal*, its content, and its articles please send to info@engineeringcity.am.

To submit articles, please send to info@engineeringcity.am. Articles can be in any language.
